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INTUSSUSCEPTION.[1]

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My duty to-night is to introduce the subject of Intussusception, and to suggest ideas that subsequent speakers will sustain and enlarge upon or refute. I do not at all profess that any, or at all events many, of my suggestions are original; but by recalling attention to the details, I hope to elicit the opinions of those who have given the subject the consideration it deserves.

The plan of my paper will be this:

1st, to say a few words as to the condition and probable causes;

2nd, to recount three cases;

3rd, very briefly to run over the symptoms necessary for diagnosis;

4th, to discuss the treatment.

First, then, as to the condition and probable causes—and I must again ask you to pardon me if I say many things familiar

[1] Read at the meeting of the Bristol Medico-Chirurgical Society on December 13th, 1893. A report of the discussion which followed is given under "Meetings of Societies."

to you all. By intussusception we mean the condition in which a part of the bowel with its mesentery slips into and is, so to speak, swallowed by the part of the bowel immediately below it. This may occur at any point in the intestinal tract, but is most common in the neighbourhood of the ileo-cæcal valve. In the case where the small intestine alone is involved, the invagination is usually short, and this—the enteric variety—occurs in 30 per cent. of the whole cases. The colic variety—or that in which the large bowel alone is concerned—occurs in 18 per cent., and naturally we find it most common in the descending colon and sigmoid flexure. The ileo-cæcal variety is the commonest, forming 44 per cent., and is that in which the ileum enters the cæcum and then advances into the ileo-cæcal valve at its head, the ascending colon doubling inside itself. This may be extensive, and in rare cases may occupy the whole length of the large bowel. Another variety is that called ileo-colic, and is where the cæcum caput coli remains *in situ*, and the small intestine passes through the valve into the larger. This occurs in about 8 per cent. of the recorded cases.

With regard to the cause: to me it seems wonderful, when we think how active and apparently partial and irregular peristalsis is, that intussusception does not more commonly occur. Anything that interferes with the proper regulation of the rhythmical movement of the intestine may cause it, and increased excitement in one part from the presence of an irritating substance—such as a piece of undigested food—probably commonly gives rise to it. Occasionally a polypus or other tumour of the intestinal wall has been shown to have excited it. Decreased or disordered intestinal movements from want of proper nerve-control, such as may occur in certain cerebral lesions, may predispose to it; and under this head we must place that curious phenomenon of intussusception of the dying, which is not uncommon. There is on the table a very good specimen of this condition, showing multiple intussuscepta, easily reducible, and not all pointing in the same direction, in some places the upper segment of the bowel having slipped inside the lower, and in others the lower inside the upper. But of all causes, I think that, in children at all

events, it is very likely that the condition is more or less directly due to external violence. We know that a great proportion of the cases occur in children. It is very common under the age of one year, and more than half the cases occur in those under the age of 10. When we think of the way in which infants are hurriedly snatched up, and carried doubled up with the hand or arm round the abdomen, can we be astonished at a part of the intestine becoming injured and perhaps paralysed by the undue pressure through the thin abdominal wall? Irregular peristalsis thus set up may be the cause of an intussusception, which manifests itself by the child screaming with abdominal pain an hour or two afterwards, the hasty lift being forgotten from constant usage, or perhaps, on the part of the nursemaid, denied. I cannot help saying in this place that I think it quite possible that intussusception occurs more frequently than we generally suppose, because of the very ready way in which it may be caused. A great many children suffer from severe abdominal pain that may or may not be followed by vomiting and diarrhœa, symptoms which give way to an opiate. Is it not likely that some of these cases are due to a small intussusception, which rights itself and gives rise to no subsequent trouble? When the pain is referred definitely to the region of the ileo-cæcal valve, the attack being paroxysmal and severe, it is sometimes recognised as being an instance of ileo-cæcal intussusception, and a tumour that disappears spontaneously can be felt in that neighbourhood. I am, however, inclined to think that we might find more cases of intussusception if we had opportunities of palpating the abdomen before Nature cured the patient.

I will now relate two cases that have been under my care at the Infirmary—the first a few years ago, and the second quite recently:

A child under the age of two was admitted into Ward 20 with severe abdominal symptoms. I am sorry I cannot give exact details of the case, as the record of it has been unfortunately mislaid. On examination of the abdomen a resisting mass was felt about the umbilicus and in the left flank. With the finger in the rectum, I could feel that a soft tumour filled the gut, and on pulling this a little downwards I could demonstrate that

the apex of the tumour just inside the anus was the ileo-cæcal valve. Under chloroform, I was able to push this easily up into the abdomen with my finger, and then with the help of a small pair of bellows, the nozzle of which was passed into the rectum and the anus held closely all round by a towel to prevent the escape of air, by inflation and manipulation I succeeded in nearly, if not quite, restoring the parts to their normal position. I could follow the tumour, and found it almost disappear somewhere near the liver. It was not a permanent cure, however, for in a few days the process had to be repeated; after that the patient was taken out, so that I cannot give the result of the case.

The second case was that of John E., aged about 30, admitted in the morning of October 14th last. He said he had been ailing for three days. He had been sick and had not passed anything from the bowels. He had had an inguinal hernia of the left side, but when I saw him, at one o'clock in the day, there was no sign of it. He was a rather fat man, with very slight distension of the abdomen, vomiting frequently—the vomit at first being not distinctly stercoraceous, but it soon became so. He had passed neither motion nor flatus for three days. There was nothing in the rectum, and nothing very definite could be felt on palpating the abdomen. There was no great pain. The patient was in such a condition, with frequent and feeble pulse and blue and cold extremities, that it was deemed inadvisable to operate at once; and thinking he might be suffering greatly from the shock caused by a journey, I directed that he should be kept warm in bed for a few hours, and should have stimulating and nutrient enemata. These he did not retain, but none of the contents of the intestine came with them. At five o'clock he had not improved, and after consultation, and at the patient's wish, I thought it best to give him the remote chance of life by operation rather than let him die from acute intestinal obstruction unrelieved. Under chloroform, I opened the abdomen in the middle line just below the umbilicus, and my fingers at once came upon a piece of distended and hard gut. This was lying immediately under the incision, and there was no difficulty in lifting it out of the abdomen. It was very dark-red, about six inches long, and to the touch solid. It was at once evident that the case was one of intussusception of the small intestine, and I was astonished at the thickness of the twisted mesentery that led into the tumour with the entering gut; it was a tight band of firm tissue as thick as one's forefinger. I made several attempts to pull it out, and though I was able to move by manipulation through the outside wall the apex of the invaginated part, I could not dislodge the gut, which seemed to be held and strangulated just inside the entrance. I therefore put enterectomy clamps on the healthy part of the intestine above and below the tumour and cut it through, and was proceeding to secure the mesentery when the patient showed

signs that further interference could be of no avail, and a few minutes later he died on the table. This was about twenty minutes from the commencement of anæsthesia. The specimen in its recent state showed how great had been the effort Nature had made to dislodge the obstruction. The intussusceptum was quite black, with a layer of coagulated blood outside it. It was, as we found next day, about five feet from the pylorus.

Another case to which I may refer is a remarkable one of my father's. It is fully published, with an illustration, in the *British Medical Journal* of April 13th, 1858, and is an instance of intussusception in which the patient, a child of five, passed a sphacelated part of the bowel *per anum*, and lived for five months after. He died from starvation on account of a large fistulous opening that remained between the duodenum and the descending colon, the result evidently of general peritonitis that followed upon the casting off of the strangulated intussusceptum. This case was also notable because at one period of his illness the boy constantly passed fæcal matter and gas *per urethram*, but the entero-vesical communication had closed before his death.

I have references to three or four other cases, but as these were under the care of my colleagues at the Infirmary, I hope they will speak about them.

A few words as to the most prominent symptoms will not be out of place, for in cases of serious abdominal trouble it is very possible to make mistakes, and it requires considerable experience and close attention to details to be able to describe beforehand with anything like exactitude the condition that will be found after opening the abdomen. The points that will help us most in the diagnosis of intussusception are these: that it is more common in males, and occurs chiefly in the young. The great majority of cases that come under the category of intestinal obstruction in children under three are instances of acute intussusception. Chronic intussusception occurs more often in males during adult life. The chief symptom is pain. It comes suddenly and is very severe—intermittent at first, and then localised round the tumour. There is no regular premonitory symptom. There may be diarrhœa. This diarrhœa usually continues, and in most cases is accompanied by a bloody discharge. Complete obstruction is extremely rare. Vomiting appears early, and is not, as a rule, copious. Tenesmus is generally very severe. Collapse is early, and the abdomen is flaccid unless peritonitis

has set in. The most definite sign is a tumour, described usually as "sausage-shaped." This, felt through the flaccid abdominal wall, is pathognomonic of the condition. It usually occupies the line of the colon. It is dull on percussion and movable.

Such are the chief symptoms, as gathered from books, by which we can recognise a case of intussusception, and I shall hope to hear this evening some remarks on their reliability. In the second case I related, I can only come to the conclusion that it was an exception to the rule in almost every particular, as, except early collapse and vomiting, most of the generally recognised signs and symptoms were absent or masked.

Lastly, as regards treatment: The time that has elapsed since the invagination took place is one of the chief points to consider in determining what course of treatment had best be pursued. It is difficult, and would probably do harm, to promulgate a rule on the subject; but I believe that most surgeons will agree that in acute cases about 48 hours is the limit of time during which we can hope to effect a cure by manipulation and injections, or both combined. After this period probably adhesions have formed between the serous coats, and these adhesions are strong enough to prevent the release of the intussusception without grave danger to the bowel below from the necessary force of the injection. If the case is left to Nature, or to Nature assisted by belladonna or opium and a suitable diet, it is possible for the invaginated part to slough off and be passed *per anum*, and the patient escape with his life. This does not occur often, and never in very young infants: it has only been recorded in children, above the age of one year, in whom there has been sufficient vitality to overcome the shock of the accident. In chronic cases there is a difference. In these probably the intussusception shifts and slips partly out, and adhesions are prevented from forming and the intussusception does not become strangulated. In them reduction may be repeatedly made, and as, in cases of prolapse of the rectum, after several trials reduction on some one occasion is permanently successful. In the treatment of these chronic

cases I think there is a chance for the exhibition of other than surgical skill, at all events as regards the prevention by diet and drugs of a recurrence of the catastrophe.

In the operation of reduction by pressure from the lower end of the bowel, air or water or a solid may be tried. The last would only be useful where the intussusception can be felt with the finger in the rectum. An oiled, padded bougie pressed up against the obstruction has been successful; but higher than the lower part of the sigmoid flexure this is hardly likely to succeed. Most commonly air or water is employed, sometimes oil or milk. In a great many cases injection of either has effected a reduction, and there is a great difference of opinion as to which should be tried. The patient is of course fully anæsthetised, and means are taken to prevent escape from the anus. My opinion is that one of the dangers lies in these means being too perfect. We ought, I think, to be able to estimate the degree of pressure on the walls of the bowel, so as to prevent this being excessive. Injection of air by a Higginson's syringe or a small pair of bellows could probably not burst the bowel, and yet will give sufficient force for the purpose. By this means, as we have proved on the cadaver, the large intestine can be easily filled, and the air passes readily through the ileo-cæcal valve. Water, milk, or oil can be injected by a syringe or by an irrigator; the latter is the better instrument to choose, as we can regulate the pressure by the height of the irrigator. If the level of the water in the irrigator is three feet above the level of the intestine, the pressure on the square inch of intestine is about 1½ lbs.; and by experiments which Mr. Mole has kindly made in connection with this paper, it was proved that the ileo-cæcal valve formed no barrier to the passage of water into the small intestine. Mr. Mole will, I hope, give us the results of his experiments, which are remarkable, and which, in my opinion, show that there is grave danger of rupture from the employment of too much pressure. I think a child would stand a far better chance of getting well after an abdominal section and the disentangling of the invagination by the fingers, than by the influx of water, if the irrigator had to be held higher than three feet to bring about the reduction; and yet in a well-known

book on children's diseases it is directed that the irrigator should be held high above the bed.

Where these means have failed or it has been decided not to try them, the choice lies between abdominal section and leaving the patient to the chance of a spontaneous cure by the sloughing off of the intussuscepted portion. We should probably all choose the former. The abdomen should be opened in the middle line below the umbilicus, and the offending portion of the intestine, which can usually be easily reached, brought to the surface. Gentle, firm traction on the intussusception, combined with taxis on the blunt lower end of the tumour, in many cases has resulted in the parts assuming their normal relation. Should it not be possible to pull the invaginated part out without applying undue force, four courses are open to us; and as the patient is probably in a condition where prolongation of any operation would greatly lessen his chance of life, we should probably choose the procedure that can be most quickly accomplished. In the first place, we can make an artificial anus with resection of the whole tumour, by sewing the healthy part of the intestine just above and below the tumour to the abdominal wall and cutting off the mass, taking care to secure the vessels of the mesentery. This operation has been done, but I do not know if ever successfully. Should the patient survive, the artificial anus could be subsequently operated on. Secondly, we could resect the tumour and unite the cut ends of the intestine and replace it in the abdominal cavity; a proceeding that it would take some time to accomplish. Thirdly, where adhesions have formed, we could strengthen those adhesions by stitching the turned-in edge of the intussuscipiens to the contiguous surface of the intussusceptum, and then either leave the intussusceptum to its fate or open the intussuscipiens by a longitudinal incision along its free border, and divide and remove the strangulated bowel within, and then sew up the incision. This would probably be only successful where a small piece of intestine has become displaced. Fourthly, where a large invagination has taken place and is strangulated, the only possible chance is to make an artificial anus in the healthy part of the gut above.

The results of the cases that have been published of enterectomy for intussusception are far from encouraging; but it is not a common condition, and as reasonable methods of operating in such cases are suggested and tried, and as apparatus is perfected, we may, I think, hope that some such improvement will manifest itself in them as has of late years appeared in the operative treatment of many serious abdominal lesions; and I hope, in conclusion, that the discussion to-night will not only be of scientific interest, but may give us some good reasons for deciding what course of treatment we had best adopt in future for the greatest welfare of our patients.

APPENDICITIS.[1]

BY

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WHEN we consider that about 20 per cent. of all bodies submitted to *post-mortem* examination, other than those which have died from appendicitis, show evidences of former appendicular lesions, and when we reflect on the serious clinical phenomena associated with the disease which forms the subject chosen for discussion to-night, its great importance, both to the physician and surgeon, becomes at once apparent.

The subject is, however, a large one, and I shall not therefore discuss the relationship of appendicitis to perityphlitis and other similar conditions, except so far as they depend on a primary inflammation in the vermiform appendix itself. This point has, to my mind, been so abundantly proved of late years that I will not now enter upon it, merely contenting myself by calling to mind that, according to Fergusson, in about 77 out of 200 normal subjects—that is, about one-third—the appendix

[1] Read at the meeting of the Bath and Bristol Branch of the British Medical Association, on January 31st, 1894. A report of the discussion which followed is given under "Meetings of Societies."

was in close relation to the sub-peritoneal tissue; so that, had it become inflamed and perforated, the abscess would probably be situated in the cellular tissue around the cæcum and in the iliac fossa. In other words, the condition of paratyphlitis so produced would really be due to appendicitis. The chief points which I think may be most profitably considered, are:

(1) The causation of the disease.

(2) Some classification on a pathologico-clinical basis, and the chief symptoms to which each of these varieties may give rise; with a few suggestions as to differential diagnosis.

(3) The question of treatment.

First, then, with regard to etiology. According to Talamon,[1] some kind of foreign body has been noted in 60 per cent. of cases of appendicitis. Pins, fish-bones, biliary calculi, and vegetable seeds have been described, but fæcal concretions are by far the most common, forming about 50 per cent. of all cases; and in order to account for those cases in which no foreign body has been found, it has been suggested that the scybalon has been dislodged, dissolved, or lost.

The frequent existence of fæcal concretions will, I think, justify us in considering where such concretions are formed, and how they act in producing inflammation of the appendix.

The generally accepted idea, according to Talamon, is that rounded fæcal pellets are formed in the cæcum, and that one or more of such scybala find their way into the appendix and there set up a spasm and inflammation of that tube. Considering that Dr. Joseph Bryant[2] found fæcal matter in the appendix in about 45 per cent. of a series of *post-mortem* examinations on persons who had died from other causes than appendicitis, I think it more likely that the hardened fæcal mass is formed in the appendix itself by the inspissation of such fæcal matter as may be considered to be normally present there. There are two points in favour of this view: firstly, the shape of the concretion; and secondly, the existence of a valve, described by Gerlach, at the orifice of the appendicular canal.

[1] *Appendicitis and Typhlitis*, 1893. [2] *Ann. Surg.*, vol. xvii., 1893, p. 164.

As regards shape, the fæcal mass has in my experience generally taken an elongated form, as if moulded in a tube,—resembling a small date-stone, rather than being rounded as ordinarily described. On this matter I should much like an expression of opinion of the members of this Association, as the accumulated experience would, I think, help to decide the question at issue.

With reference to the so-called valve, I have, after careful examination, come to the same conclusion as Professor Struthers, that it is simply one of those crescentic folds that always occur when one tube joins another at an acute angle; but yet this is sufficient to obstruct the entrance of a fæcal concretion from the cæcum, although, as we have seen, it practically offers no resistance to the entrance of ordinarily soft fæcal matter.

Granting then the presence of a fæcal concretion, it is supposed that the irritation thereof produces a spasm of the muscular tissue of the appendix, analogous to the spasm produced by a biliary or renal calculus. That this spasmodic effort to expel the foreign body actually occurs has been shown by Morris[2] of New York, who has recorded a case in which he positively saw the appendix in a state of spasm, which subsequently relaxed. There is no doubt that these spasmodic attacks are the cause of the severe pain which occurs in the early stage of the disease, and this is supported by an interesting case, which came under my care last year, of a man who for eight months had been subject to attacks resembling those of relapsing appendicitis, and which had prevented him from doing his work for more than a week or two at a time during that period. I removed the vermiform appendix, which was quite free from those adhesions which are usually present in these cases, and on opening it I found it nearly full of semi-solid fæcal matter, but with practically no inflammation in its wall. The man has now been working for some months without any pain or inconvenience. Here, then, was a case in which the symptoms were apparently due to spasm only, for there was no

[1] *Edinb. M. J.*, Oct., 1893.
[2] *Ann. Surg.*, vol. xviii., 1893, p. 370.

chronic inflammatory thickening of the walls of the appendix and no peritonitis.

The spasm produced by the irritation of the foreign body causes compression of the walls of the canal and interference with their vascular supply; and then, if the irritation be sufficiently severe and prolonged, an inflammation—plastic, suppurative, or gangrenous—ensues.

Treves[1] thinks that the morbid changes are caused by torsion of the appendix, which thus produces compression of its walls, and distension with mucus of the distal portion, with ulceration or gangrene there, or at the seat of the bend. This theory will certainly account not only for cases where a fæcal concretion is formed, but also for cases where no such concretion exists; and considering that fæcal matter and mucus are found in normal appendices even more often than in cases of appendicitis, we are, I think, justified in assuming that the mere presence of fæces or mucus—both of them normal contents of the intestinal canal—would scarcely be likely to give rise to mischief, unless by their retention the appendix becomes over-distended by an accumulation of its secretions, or its walls become irritated by the hardening of the retained fæces. To this, however, I shall presently return; and although it is difficult to determine whether the torsion is primary and causes the peritonitis, or whether it is secondary to an antecedent peritonitis producing adhesion of the mesentery and kinking of the tube, we must admit that this condition of torsion could either produce, or exaggerate, the symptoms; and certainly in a large percentage of Treves's cases, torsion of the tube appears to have been present.

Why the fæcal material should become inspissated it is difficult to say, but we can readily imagine that an increase in the curvature of the appendix—which is normally due to its short mesentery—would virtually lead to the shutting off from the intestine of fæcal matter in the appendicular canal, and that this would be followed by absorption of fluid and hardening of the fæces. Indeed, it seems to me that the hardening of fæcal matter in the appendix might easily result from the

[1] *Surgical Treatment of Typhlitis*, 1890.

prolonged continuance of fæces in the canal, without any kinking of the tube whatever.

In a similar manner a real or apparent stricture of the appendix—the result of former ulceration or kinking—might give rise to retention of mucus, with distension of the tube and secondary inflammation, as I have already indicated.

There are two important conditions which we must consider in relation to the theory of concretion as a cause of appendicitis: one is that the disease is four times more common in males than in females, and the other is that about 76 per cent. of all cases occur below the age of 30. Can we account for these facts on the supposition that the symptoms are due to the formation of a foreign body in the appendicular canal?

With regard to the predominance of the male sex, I think the observations of Dr. Bryant[1] are important. He has shown that the greater the diameter of the appendix, within apparently normal limits, the greater the probability of the presence within it of fæcal or other foreign matter—so that in appendices $\frac{5}{16}$ of an inch in diameter, no less than 89 per cent. contained fæcal or other material; that in 70 per cent. of males and only 56 per cent. of females the appendix contained abnormal matter of some kind; and that the average diameter of the appendix of the male is about $\frac{1}{16}$ of an inch greater than that of the female. If we accept the theory of fæcal concretion as a causative agent, I think these observations go a long way towards explaining the fact that disease of the appendix is so much more frequent in males than in females. The common occurrence of the disease in early life is not so easily explained, as with the exception of the researches of Professor Struthers, I am not aware of any statement with reference to the calibre of the appendix at different ages. This is a subject that requires further elucidation; but so far as records go, it appears that the diameter of the appendix is relatively greater in the fœtus, and that in later life it is diminished. The evidence, however, is too scanty for us to draw any very definite conclusions; although, perhaps, it is slightly in favour of the theory I have been endeavouring to establish. Injury, cold, fatigue,

[1] *Loc. cit.*

and indigestion have been assigned as causes, and they probably act injuriously by inducing an increased peristalsis and spasm of the tube. I have never seen any other substances in the appendix except fæces, mucus, and pus; but bodies foreign to the intestinal tract, which form only a small percentage of cases, would act in the manner already described.

At any rate, I think we are justified in saying that the presence of a foreign body—fæcal or otherwise—is the exciting cause of the mischief in the great majority of cases. Many observers, however, are of opinion that in addition to the presence of the foreign body there is, in consequence of the irritation so produced, an active development of various bacteria, which then attack the tissues already diminished in vitality by the compression of the walls of the appendix. On this matter I have no personal experience whatever; but as the subject has lately received much attention, I do not like to leave it unnoticed as one of the possible factors in the inflammation, ulceration, or perforation of the appendix. Many organisms are found in the alimentary canal of normal individuals, but the one which has been specially credited with such lesions as that now under consideration is the bacillus coli communis—an organism which is identical with the bacillus pyogenes of urinary infection and with other forms described by various authors. According to Roswell Park, "this organism, which is constantly present in the intestinal canal, is not always a harmless inhabitant, but becomes at times an active invader. It does not confine itself alone to the intestinal mucosa, where it may set up most active desquamative lesions, but may pass this barrier and penetrate into the general circulation and exercise pernicious activity in numerous other organs, with toxic effects upon the system at large."[1] The causes of this increased virulence have not yet been ascertained. Macaigne[2] regards this bacillus as the cause of various forms of infectious enteritis, and believes that probably most, if not all, cases of appendicitis come also under this head. It is in cases of perforative peritonitis that the bacillus coli communis is most often found,

[1] *Ann. Surg.*, vol. xviii., 1893, p. 307.

[2] Quoted by Roswell Park.

—sometimes alone, sometimes with other organisms,—although perforation does not appear to be essential to its presence in the inflammatory exudation. One argument regarded as favouring the agency of some such organism is that the perforation in cases of appendicitis is not always at the point of contact of the foreign body, which would probably be the case if the perforation were due to compression of the walls of the tube at that point. On the bacillary theory it is supposed that the distension, spasm, or twisting of the tube already referred to brings about an obliteration of the single artery by which the appendix is usually supplied, and that the walls being thereby lowered in vitality will, when invaded by this organism, give way at that point which is most susceptible to that invasion—*i.e.*, at a spot where the vitality of the tube is most diminished, whether that spot be opposite to the position of the foreign body or not.

We have now to consider briefly the various pathological and clinical aspects of appendicitis. In order that we may not go too far afield, I shall omit all specific forms of appendicitis, such as that occurring in tubercular, dysenteric, or typhoidal ulceration of the intestines. In these cases the appendicular disease is only a part of a more general process, by which, however, the symptoms are necessarily somewhat obscured.

The first variety, and the least fatal, may be called simple appendicitis, by which I mean an inflammation of the walls of the appendix which does not extend to the peritoneum. The depth to which such inflammation may affect the walls of the appendix will of course vary; but in order not to confuse the issue, I shall not refer to the various sub-divisions which some observers have described. The symptoms are mainly those of colic, with a fixed pain somewhere about a point midway between the right anterior superior iliac spine and the umbilicus —McBurney's point,—a slight febrile condition, constipation and vomiting. These symptoms, which commence more or less suddenly, may at first be associated with general abdominal pains, which gradually become localised in the spot referred to.

The abdominal muscles are tense on the right side, and there is marked tenderness in the neighbourhood of McBurney's spot, where perhaps an enlarged appendix may be felt after the rigidity of the muscles has passed away. The symptoms usually subside in the course of seven or eight days. The slight degree to which the appendix may be pathologically affected, the marked presence of appendicular colic, and an occasional tendency to relapse are all shown by the case which I quoted when discussing the etiology of the disease, and Dr. Bull[1] has reported two similar cases.

The next variety—that of plastic appendicitis—is associated pathologically with a fibrinous inflammation of the neighbouring peritoneum, compared by Talamon[2] to the plastic pleuritis which may occur in cases of pneumonia. This plastic appendicitis is the ordinary non-suppurative, acute appendicitis. It commences with symptoms resembling those of the simple variety, but proportionately more severe, and is attended by the inflammatory peritoneal exudation referred to. This localised peritonitis is manifested by the presence, about the second day of the disease, of a more or less defined swelling in the right iliac fossa, varying in size with the extent of the peritoneum affected, but reaching sometimes as high as the umbilicus or extending downwards into the true pelvis.

In an ordinary case this exudation may be absorbed in about three weeks; but I have known it to continue for nearly double that length of time.

The general tendency is, however, towards recovery sooner or later.

The third variety—suppurative appendicitis—I wish to reserve, for reasons which will presently appear, for those cases of appendicitis associated with a *circumscribed* purulent peritonitis. In so far as the accompanying peritonitis is limited we have a pathological condition which resembles the plastic appendicitis just described; but without going into details, I may state that the balance of evidence is in favour of the suppurative form being caused by a perforation of the appendix, and the plastic form being unassociated with any such

[1] *Med. Rec.*, Ap. 20, 1890. [2] *Op. cit.*

lesion. Clinically, at all events, we may regard them as distinct varieties. The diffuse colicky pains, gradually limiting themselves to the right iliac fossa, with signs of localised peritonitis and tumefaction, resemble the symptoms of the plastic variety, but the temperature is apt to be rather higher—say 102° or 103° F. A fluctuating purulent swelling has sometimes been detected as early as the second day, but at other times not till the end of six or seven days or more. The tenderness on pressure and the rigidity of the muscles help to obscure the diagnosis, and we may have to rely for our belief in the existence of suppuration upon the general condition of the patient as to sweating and temperature, and upon a continuance of the illness beyond the time at which we might expect an amelioration in a more simple case. An examination of the rectum (and vagina in the female) in these cases is very important, as it may furnish most trustworthy information.

In one case I was able to diagnose the presence of pus by this means, when from the swelling of the abdomen it could not be detected; and in another case, in which suppuration was suspected, I felt justified, after a careful exploration of the rectum, in postponing any operative procedure, and the patient —a medical man—made an uninterrupted recovery.

Unlike the plastic exudation, this collection of pus shows no tendency to absorption, but if left to itself ends by bursting into the general peritoneal cavity, and thus causes a diffuse peritonitis which terminates fatally; or it bursts externally, or into one of the viscera, and may thus lead to recovery.

I must not leave the subject of suppurative appendicitis without referring briefly to that latent form of the disease which is generally associated with suppuration in the cellular tissue behind the peritoneum in the iliac fossa. The gravity of this form is only second to that of the rapidly perforative form which I shall presently describe. It owes its great fatality to its insidiousness, for it most often occurs after convalescence from acute diseases and in old age, with perhaps few other symptoms than vague colicky pains and a slightly elevated temperature, so that the discovery of suppuration emanating from a perforated appendix does not take place until the area

affected is so extensive that the damage is irreparable; or perhaps the sudden exacerbation of symptoms which first warns the physician of the gravity of his case is rapidly followed by a fatal issue.

The next variety—that of rapidly perforative or fulminating appendicitis—is more common in young people, and is the most fatal of any form of appendicitis. Its seriousness is shown by the fact that in at least 75 per cent. of perforative cases it was the *first* attack which was accompanied by the perforation. The strangulation of the appendix in the way already explained is most complete, and rapidly runs on to gangrene of its walls, which then become perforated, with the rapid diffusion of the septic contents over the peritoneal cavity. Perforation does not usually occur until the second or third day, being preceded by the general and local pains and vomiting, as in other varieties. The temperature is not at first much raised. With the onset of perforation the symptoms assume all the gravity of an acute general peritonitis. The pain, especially in the right iliac fossa, is more intense and rapidly spreads over the whole abdomen, the vomiting becomes incessant, constipation is practically absolute, and the pulse is small and frequent. The general symptoms are at first those of shock, and the temperature may be low, although it subsequently rises to 102° or more if the patient lives for any length of time. The abdomen is at first retracted and the abdominal muscles very tense, but later on there may be general abdominal distension from paralysis of the intestines. The face bears the usual anxious expression of acute abdominal disease. The patient may die in a day or two, apparently from a general septic condition, before much suppuration has occurred; in some cases he may drag on for a fortnight or more, but eventually he dies of a general suppurative peritonitis. According to Fitz,[1] 98 out of 176 cases died in the first week.

The last class which I shall mention is that of relapsing appendicitis. It is necessary to insist upon a clinical distinction

[1] *Am. J. M. Sc.*, vol. xcii., 1886, p. 321.

between recurrent cases, in which there is a definite return to health of some duration between the attacks, and relapsing appendicitis, in which the patient is practically never entirely free from symptoms between the exacerbations of the disease. It is to the latter that I now refer. Pathologically, relapsing appendicitis resembles the plastic form of the disease, but its definite clinical course makes it desirable to place it in a different category. Relapsing appendicitis is more often associated with the retention of mucus or pus, rather than fæcal matter, in the tube; but however that may be, we may suppose that the repetition of the attacks is simply due to a continuance of those local conditions which formed the starting-point of the disease. It is in this form, too, that Treves[1] has so frequently found the kinking of the appendix which he has described. The repeated attacks of peritonitis are, no doubt, protective, and hence we find that this variety is less fatal than any except the simple form. The disease may indeed actually cure itself by producing an obliteration of the appendix, and when we interfere we do so more often on account of its morbidity than its mortality.

The symptoms of the relapse are generally the same as the simple or plastic forms of the disease, and I shall not further describe them. Only rarely is the attack associated with suppuration. In about a week, when the acute stage is over, the patient begins to recover, but he does not do so completely. In this intermediate period he suffers from a feeling of uneasiness in the right iliac fossa, constipation or diarrhœa, abdominal distension, and indigestion. These symptoms get worse after several attacks, which vary in frequency and intensity, and the patient becomes a chronic invalid. In the intervals tenderness can generally be elicited near McBurney's point, and oftentimes the enlarged appendix can be felt.

These, then, are the main clinical aspects presented by cases of appendicitis. The most important questions to decide are, whether the appendix has become or is becoming rapidly perforated, and whether suppuration has occurred. I cannot now pursue these questions further than I have done in my

[1] *Op. cit.*

account of the various symptoms, but I hope that those of more extended experience will help to elucidate these very important considerations.

As regards general diagnosis, it is not surprising that the peculiar colicky nature of the pain in the early stage of appendicitis should lead to its confusion with such diseases as renal and hepatic colic. We must, however, be guided by the history of the case and the accompanying symptoms, and remember that the inflamed appendix almost always gives rise to a fixed painful spot. This fixed pain appears within 24 hours in about 72 per cent. of cases, and becomes localised in the right iliac fossa in 54 per cent. of all cases—corresponding practically with McBurney's point. But the position of the appendix is variable: it has been found under the liver, in a hernial sac, and in other unusual positions; so too much reliance must not be placed on the actual locality of the fixed pain. All that we can say is, that the point of greatest tenderness corresponds with the position of the inflamed appendix.

This variability of position also explains why we may be called upon to differentiate between appendicitis and diseases of the uterine appendages or perinephric abscesses.

The peritonitis and the obstinate constipation, distension, and vomiting caused by the disease have not infrequently led to a diagnosis of intestinal obstruction. We now know, however, that in all cases of acute peritonitis occurring in children and young adults, a perforative appendicitis must be thought of as a very probable cause of the mischief. In a case which was sent to me as an intussusception, the bulging which was felt *per rectum* was caused by a collection of pus in the neighbourhood of a perforated appendix.

From typhoid fever, appendicitis will best be differentiated by remembering the peculiar character of the pain and its more or less sudden onset, and by watching the course of the temperature and the accompanying general symptoms.

We now come to the question of treatment, the general principles being easily deduced from the clinical and pathological conditions which we have just considered. The American

surgeons, regarding the probably infectious nature of the disease and the impossibility of stating that any individual case will not become perforated, advise early operative interference in nearly every form of appendicitis; but in face of the fact that about 90 per cent. of cases recover spontaneously, we cannot adopt so indiscriminate a method of treatment.

It is true that in the early stages of the disease we cannot differentiate one variety of appendicitis from another, and when first called to a case we should probably think that the symptoms would be sufficiently met by rest in bed, a moderate amount of liquid diet, the administration of a purgative by the mouth, or by rectal injection if necessary, the local application of leeches or fomentations, and a hypodermic injection of morphia for the relief of pain. These means would doubtless be sufficient for those cases which I have described as simple appendicitis and plastic appendicitis respectively, which include the great majority of cases of appendicitis and always tend to recover spontaneously.

On the other hand, this treatment would be of no avail in the rapidly perforative variety, in which the only chance of recovery is in prompt surgical interference, as early as possible after the diagnosis of perforation has been made.

Suppurative appendicitis occupies an intermediate position. There is not perhaps the urgent need for haste that exists in the rapidly perforative variety, but yet I think operative interference is equally necessary. It is perfectly true that cases of this kind may recover spontaneously by the discharge of the pus into one of the viscera or through the skin, but the chances of success are much less under these circumstances than when the patient is submitted to operation. Moreover, the patient runs the grave risk of the abscess bursting into the general peritoneal cavity.

A great deal has been written about the time of operation, but it seems to me that this only depends on the time at which suppuration is diagnosed. This may be during the first week, but is more common during the second; but whichever it may be, operation should be proceeded with as soon as the presence of pus is clearly indicated. In actual practice we must meet

with cases in which we are in doubt as to whether pus is present or not. Speaking generally, there is no great harm in delaying operation under these circumstances, if the chances are as much against, as for, the presence of pus; but if we find at this time that pain is increasing, with a rapid pulse, continued elevation of temperature, and tympanites, then it would be better to operate and so endeavour to discover the position of the probable deep-seated suppuration. When I use the term "operate," I mean of course by an exploratory incision—the use of the aspirator through the abdominal wall for diagnostic purposes being generally, and very properly, condemned.

Cases of appendicitis in which the symptoms recur after a definite recovery from the former attack must be treated in accordance with the nature of the present illness, which may not be followed by any further attacks; but in relapsing appendicitis we know that the exacerbations will be repeated unless we operate, although, as I have already indicated, we operate more because of the condition of chronic invalidism than from any immediate danger to the patient. I cannot do better than quote from a recent article by Mr. Treves[1] as to the circumstances which he thinks would justify an operation in these cases. He says that in all the cases with which he has dealt, "one or other of the subjoined conditions has been present:

(1) "The attacks have been very numerous.

(2) "The attacks are increasing in frequency and severity.

(3) "The last attack has been so severe as to place the patient's life in considerable danger.

(4) "The constant relapses have reduced the patient to the condition of a chronic invalid, and have rendered him unfit to follow any occupation.

(5) "Owing to the persistence of certain local symptoms during the quiescent period, there is a probability that a collection of pus exists in or about the appendix."

He says, moreover, that he has never operated in any case in which he has not been able to make out the enlarged

[1] *Brit. M. J.*, 1893, vol. i., p. 835.

appendix still in evidence after the acute symptoms have passed away. It is, of course, well known that Mr. Treves has advocated operative procedures during the quiescent period, after the acute symptoms have subsided; and this is agreed to by most surgeons, as it is preferable not to operate during an acute inflammatory condition unless the urgency of the symptoms demands it.

To sum up, I would treat simple and plastic appendicitis on an expectant plan; but would perform abdominal section:

(1) In suppurative cases.

(2) In cases where there is good ground for *suspecting* deep suppuration.

(3) In the relapsing form.

(4) In rapidly perforative cases.

These, then, are the main principles of treatment of the various forms of appendicitis.

The all-important point is, to decide whether an operation is necessary or not, and our difficulty and anxiety in arriving at a definite conclusion on this matter are often greatly increased by the fact that we may not be called in until the prolonged administration of morphia or opium has obscured the symptoms.

It now only remains for us to consider a few operative details.

Speaking generally, the best incision is an oblique one placed at right angles to an imaginary line drawn from the right anterior superior iliac spine to the umbilicus. The incision should be two to four inches long, according to circumstances, placed about two or three inches internal to the iliac spine, and its centre corresponding to the imaginary line referred to.

It will not, however, be best to adopt this incision in all cases, especially suppurative ones. In these our incision should be placed over the seat of suppuration, not only because the pus is thus evacuated by the shortest route, but because we are more likely by this means to avoid opening, and perhaps infecting, the general peritoneal cavity. This latter point is most important, and it is chiefly for this reason that incisions in the mid-line or in the right linea semilunaris are not advisable. When adhesions are present we must exercise great care in the

division of the peritoneum, or we may easily wound the subjacent intestine—indeed, in some cases this can scarcely be avoided,—but in cases of relapsing appendicitis, where adhesion of the intestines to the abdominal wall is not uncommon, Treves advises that the danger of wounding the gut is best prevented by opening the abdominal cavity beyond the diseased area where there are no adhesions.

Then comes the important question as to whether the appendix shall or shall not be removed? In some cases this is quite impossible; but our rule should be, that the appendix should be taken away if it can be removed without increasing the danger to the patient. This will depend on the number and strength of the adhesions, and the general condition of the patient; and these can best be gauged by the surgeon operating, to whose individual judgment the decision of this point must be left. We cannot formulate rules, for it is obvious that a more lengthened time in separating the adhesions and getting at the appendix might be allowable with the patient in a good condition, whereas in another case the condition of the patient might be too serious to allow of anything more than the evacuation of the pus and the insertion of a drainage-tube. Great care must be exercised in the treatment of these adhesions; and Treves thinks they are best divided with a knife, as there is less risk of opening the intestine. I believe, however, in suppurative cases it would be far wiser not to attempt the removal of the appendix at all, than to run any great risk of opening the general peritoneal cavity in the separation of adhesions.

The appendix, when found, may be so bound down that we can only throw a ligature round it and remove the portion below. The simple ligature applied in this way has been very effectual; but when it is possible and the condition of the patient allows it, I think it better to divide the peritoneum in a circular manner about half-an-inch from the cæcum, and then, having removed the appendix below, to suture the muscular and mucous walls of the stump, which is then invaginated into the cæcum and the divided peritoneum stitched over it. In this way a fæcal fistula is less likely to occur.

Any scybalon that may have escaped from the appendix should be removed, and in suppurating cases the cavity should be gently irrigated with warm boracic lotion.

In the rapidly perforative variety where there is a general infection of the peritoneum, the whole abdominal cavity should be flushed out with boracic lotion or boiled water. This is the only method which holds out any chance of success, although, so far, I believe a case reported by McBurney is the only one which has ended in recovery from this very fatal form of the affection.

A rubber tube should be inserted in the suppurative and rapidly perforative varieties, but in relapsing appendicitis neither flushing nor drainage is required as a rule.

I have now completed the task which the Council of the Association was kind enough to ask me to undertake, and which I accepted not only with a due sense of my responsibility, but with the gratifying knowledge that the doubts and difficulties incidental to the diagnosis and treatment of the disease under our consideration would be made less by the discussion which is about to follow.

SO-CALLED "DUCT CANCER" OF THE BREAST, WITH THE ACCOUNT OF A CASE OF LARGE RECURRENT DUCT PAPILLOMA.

BY

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MANY papillomatous cystic tumours of the breast have been described as "Duct Cancers."[1] Mr. Roger Williams[2] has pointed out that this is inaccurate, but I would suggest that

[1] Barker, *Brit. M. J.*, 1890, vol. i, p. 590. Pollard, *Tr. Path. Soc.*, 1886, p. 483. Pitts, *Ibid.*, 1888, p. 320. Battle, *Ibid.*, 1888, p. 322. Robinson, *Ibid.*, 1890, p. 221. Bowlby, *St. Bart. Hosp. Rep.*, 1888, p. 263, and *Lancet*, 1893, vol. i., p. 1369. Masterman, *St. Bart. Hosp. Rep.*, 1891, p. 193. Robinson, *Tr. Path. Soc.*, 1889, p. 285, and 1891, p. 229. [2] *Lancet*, 1892, vol. i., p. 858.

certain features which are still held to justify the name "duct cancer" as applied to these growths do not furnish sufficient ground for so calling them.

We find a cyst of the breast packed tightly with papillomatous growth, and therefore presenting the appearance of a solid tumour; and moreover, on microscopic examination we find a condition closely resembling the alveoli of cancer, as when the branching processes are cut across spaces are seen filled with (or lined by) epithelium; and in some of these tumours the papillomatous processes are described as joining and forming trabeculæ. The resemblance in some sections to cancer is a very close one, but we can generally in some parts define the arborescent papillomatous growth.

It is maintained that these tumours belong to the carcinomas because they grow from the epithelium of the ducts and infiltrate the parts around. This infiltration is said to be alone sufficient for classing them amongst the malignant tumours and distinguishing them from the simple papillomas. But is this infiltration of the surrounding fat alone sufficient for classing them as malignant tumours? The papillomatous growths in an innocent ovarian cyst may quickly burst through the cyst wall, and if that cyst was surrounded by tissue as it is in the breast, probably the extruding papillomatous growth would invade it; but the tumour is not therefore a cancer, though of course some of these papillomatous ovarian cysts are, but not necessarily every cyst with extruding papillomatous growth. And papillomatous masses from ovarian cysts have been found growing into the interior of the uterus.[1] Here the cyst could hardly have simply ruptured through the thick wall of the uterus and thus allowed the papillomatous growths to protrude, almost certainly the papillomatous growth must have itself penetrated the wall of the uterus.

That cysts with papillomatous growth were found in the fat around the breast in one or two of Mr. Bowlby's cases does not seem to me any argument in favour of regarding the disease as cancer, seeing how small outlying masses of gland tissue are found in the fat around the breast in which cystic change might

[1] *Johns Hopkins Hosp. Rep.*, vol. iii., 1893, p. 28.

readily occur, for these tumours are not always found only in the neighbourhood of the larger ducts.

Are these cases then clinically malignant? There are a few cases on record which show that they may recur locally, such as Butlin's celebrated case of multiple recurrences,[1] and Bowlby's recorded in *St. Bartholomew's Hospital Reports*, 1888. Robinson's[2] growth has also recurred; it is described as a cyst, but not as if made up of cysts with intracystic growth. To these cases I must add the one which I now publish. From the description of Godlee's case,[3] which is the only one on record in which the glands were affected, I cannot make out the nature of the growth, but Pollard[4] says it resembled his cases, which were certainly only duct papilloma. The nature also of Shattock's rib specimen[5] seems uncertain; the description of it does not read like that of duct papilloma.

The malignancy then of these growths is only shown by their local recurrence, *i.e.*, they are no more malignant than a small spindle celled sarcoma or "recurrent fibroid," and in the great majority of cases they never recur at all. Why, then, should we call them cancers? Certainly the term cancer now means pathologically nothing more than that the growth is epithelial in origin; but clinically it expresses in many cases a malignant tendency, varying of course with the locality of the growth. A cancer of the breast is at any rate a very malignant form, and are we therefore justified in calling these cystic papillomas cancers, even if some of them recur locally? I think not. I should even object to call them malignant tumours, inasmuch as there are all degrees of malignancy, and to speak of a malignant tumour conveys no definite meaning. It may imply local recurrence at long intervals, as in the case of a recurrent fibroid, or gland infection as in epithelioma of the lip, or the most terribly fatal metastatic growths in internal organs combined with the other two. If, then, we speak of a cystic papillomatous tumour of the breast as malignant, we ought to be most careful in what sense we use the term.

I have carefully referred to all the cases Mr. Roger Williams

[1] *Tr. Path. Soc.*, 1887, p. 343. [2] *Ibid.*, 1891, p. 229. [3] *Ibid.*, 1876, p. 270.
[4] *Ibid.*, 1886, p. 483. [5] *Ibid.*, 1888, p. 324.

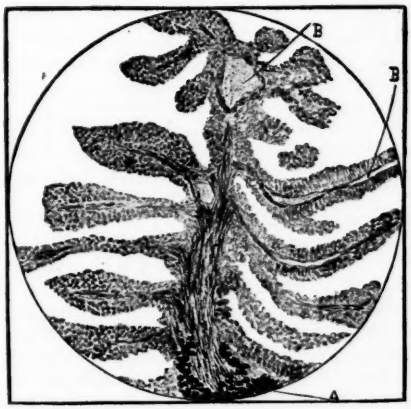
mentions[1] as examples of tubular cancers, published in this country, and nearly all seem to me instances of duct papilloma, and to many of them I have already referred as such. Robinson[2] also quotes many of these cases in support of the description of his first variety of duct cancer—cases which are, I think, cystic papillomas.

CASE OF RECURRENT DUCT PAPILLOMA.

A woman, 53 years of age, was admitted into the Bristol General Hospital in November, 1892, with a large recurrent tumour of the breast. She was under the care of Mr. Pickering, and I am indebted to him for permission to publish the case, in which I as registrar took much interest, and which I investigated pathologically. In the museum of the Hospital I discovered the primary growth, and I have made microscopic sections of it. I propose first to describe the growth, and then the recurrence. It was removed by Mr. Pickering three years ago. Almost certainly the whole breast was removed, as the nipple had disappeared when she was readmitted with the recurrence. The growth is a lobulated round mass, composed of a number of cysts filled with friable closely packed tissue. These cysts form the bosses on the surface. Between the cysts in the interior are some tracts of fibrous tissue. The whole growth at first sight appears solid, but on careful inspection it is seen to be made up of these cysts with tightly packed intracystic growth. The tumour measures 4¼ by 3 in. A portion of one cyst-wall and the intracystic growth adjoining was removed, and, after hardening in strong spirit, embedded in celloidin and then cut. The embedding in celloidin was necessary, as the intracystic growth was so friable. The cyst-wall is in parts fibrous, but the larger area of the section is infiltrated with small round cells, which stain deeply with eosine, but no part of them takes the logwood stain. They do not, however, look like extravasated blood. In parts there are pigmented cells like a melanotic sarcoma. The intracystic growth is seen to be composed of papillomatous processes of epithelial cells with well-stained nuclei (with logwood), cut in all directions, with fibrous stems between them, here and there containing one or more vessels.

[1] *Lancet*, 1892, vol. i., p. 858. [2] *Ibid.*, 1892, vol. ii., p. 73.

The growth began to recur two years after removal. It gave rise to no pain. When she was admitted there was, under the old scar, a hard, irregular mass, the size of a cocoa-nut, hanging down by its weight towards the axilla. It did not implicate the muscle beneath, but was adherent to the scar. There were no enlarged glands. After removal the tumour measured 5½ by 4 in. Some parts of the growth, which before removal felt quite solid, could be felt to fluctuate from the diminution in tension. On cutting into the tumour, dark-red blood poured out in large quantity. The growth consisted of a number of cysts containing either a very soft white papillomatous growth or altered blood-clot. The blood which flowed away on cutting into the tumour was contained in the cysts. The papillomatous growth was as soft as velvet. It fairly filled the cyst, but was not so tightly packed in as in the primary growth. It was attached to the cyst-wall at one spot, but could be easily washed away by a gentle stream of water. The cyst-wall was in some places fairly thin, in others thick and tough like leather. There was no solid growth between the cysts. The tumour was only adherent to the skin in the way a fatty tumour is. It did not in any way infiltrate



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A. Large melanotic cells in stem of papillomatous growth.
B.B. Vessels.

the skin. Sections were made across one of the smaller cysts filled with intracystic growth. With a pocket lens the interior of the cyst was seen to be occupied by an arborescent mass, and papillomatous processes could be seen springing from the wall in parts. Under the microscope these were seen to be formed of a delicate central stem (generally containing a blood-vessel) covered with round cells, the deeper ones having elongated nuclei like columnar cells in parts. The wall of the cyst was in some places fibrous, but in other areas some round and spindle cells were to be seen.

Progress of the Medical Sciences.

MEDICINE.

Dr. Hale White[1] has been led to make some fresh observations on the influence of diet in Bright's disease, because there is a conflict of opinion as to which is the best diet. A milk diet is frequently recommended on the grounds that it (1) diminishes the amount of albumen, (2) that it is easily digested and absorbed, (3) that it does not irritate the kidneys, (4) that it is diuretic, and (5) that it contains no toxic substances. The author finds, however, that it does not always diminish the albumen, at any rate, in chronic interstitial nephritis; and that even if it does so, there is no proof in many cases that this is of any benefit. The actual amount of albumen passed is rarely of much importance in itself. Many patients with Bright's disease suffer from indigestion when fed solely on milk. It has not been shown that ordinary food does irritate the kidneys. Milk is neither a certain nor a powerful diuretic. The belief that a diet containing very little proteid is beneficial in Bright's disease is probably due to the lingering survival of the false view that retention of urea is the cause of uræmia.

He has made a careful analysis of eight cases of chronic interstitial and two of chronic parenchymatous nephritis. The diets given were: (1) Milk, containing 1076 grains proteid (3 pints milk); (2) Farinaceous, containing 1137 grains proteid (bread 12 oz., milk 41 oz.); and (3) Full diet, containing 1522 grains proteid (bread 12 oz., meat 6 oz., milk rather over 1 pint, and rice-pudding ½-lb., or ½-pint mutton broth).

[1] *Med. Chir. Tr.*, vol. lxxvi.

Dr. Hale White concludes that on the whole an ordinary full diet is best, for (1) it does not increase the liability to uræmia. (2) The general condition is improved upon it; the patients feel stronger and the state of the circulation is better than upon milk or farinaceous diet. (3) There is a saving of albumen to the body, for even if the output of albumen is increased, which is by no means always the case, more than sufficient proteid is taken on the full diet to make up for the extra loss. (4) The effect of diet on urea-excretion is too uncertain to be of any guide, but there is no evidence that full diet is harmful in this respect. (5) There is no evidence that full diet contains or specially leads to the formation of toxic products, which are harmful in chronic Bright's disease. (6) The repugnance felt by these patients to farinaceous diet and to milk is avoided.

On the other hand, less urine is passed upon full than upon the other diets: this may be counterbalanced by the ingestion of more water, and in many cases of chronic Bright's disease diuresis is always profuse. The author thinks that as his 10 cases were sufficiently ill to require admission to hospital, his conclusions might not apply to mild cases or to those persons who are accustomed to overeat themselves.

* * * *

Dr. Brockbank,[1] in a very valuable and exhaustive paper, states that gall-stones are formed in the following way: The cholesterin is derived from the mucous membrane of the surface of the gall-bladder or from that lining the glands. The shed epithelium falls into bile, which remains an abnormally long time in the gall-bladder. The longer bile remains in the gall-bladder the more cholesterin does it contain. Stagnation of the bile is induced by want of exercise, by an accumulation of fæces in the hepatic flexure of the colon pressing on the cystic duct, by a fundus depressed from distension, or from corset-wearing, until it lies nearly vertically below the outlet of the gall-bladder. When the epithelial cell has remained for some time in the bile, it breaks up into a granular detritus, from which cholesterin crystals subsequently form, or it is transformed in part into "myelin bodies," which turn into crystals. These myelin bodies found in *post-mortem* changes in human bile are of similar nature to those described by the author as formed by the action of soap on cholesterin (see below). If cholesterin is formed as a normal product of the metabolism of the cells, it is secreted in a viscid form, which turns crystalline by combining with the water of the bile. If sufficient bile-salts were present to dissolve the cholesterin as it is formed, no crystals would appear; but when the former are deficient, cholesterin-crystals are deposited and grow into clusters, over which a deposit of cell-detritus, bile pigment, and mucin forms and binds them together. These small masses fall by their weight to the lowest

[1] *Med. Chron.*, Nov., Dec., 1893.

part of the gall-bladder, and remain behind when this is emptied. A concretion tends to increase in bulk by the collection of fresh crystals; when it has reached a certain size, the emptying gall-bladder contracts on it and compresses it into a compact mass. If lime be present in the bile, the deposition of lime-soaps on the concretion will make the mass more stable. The author does not think that the formation of a compound of lime and bile-pigment is essential for the commencement of a calculus, but that the crystals on which the pigment is deposited are cholesterin crystals, though not in the form of plates. Facts which show the influence of diet on formation of gall-stones are: Carnivora do not suffer from gall-stones, except under domestication, when (*e.g.* in the case of pet dogs) sugar, cakes, and carbohydrates enter largely into their diet. This freedom from gall-stones is not connected with the greater quantity of taurocholate of sodium in the bile of carnivora, but with the largely nitrogenous nature of their diet in the free state. Cattle suffer more from gall-stones when stall-fed. In man, Germans suffer more from gall-stones than the English, and the former indulge more freely in breads, carbohydrates, starches, vegetables, and sweets. Gall-stones are more common in the elderly, who take less animal and more carbohydrate foods, and less exercise than younger persons. In 220 livers from diabetic patients, a calculus was only found once (average in all cases, 5-12 per cent.). Gall-stones are frequent in chronic heart-diseases, in which the patients live chiefly on milk and farinaceous diets.

Dr. Brockbank determined the solvent power on gall-stones of various substances in solution in a flask kept at the body-temperature. He found that 1 per cent. solutions of the salicylate, sulphate, benzoate, phosphate, bicarbonate, and chloride of sodium, of phosphate, iodide, bicarbonate, and sulphate of potassium and chloride of ammonium, and 5 per cent. solutions of salicylate and phosphate of sodium and of chloride of ammonium, had no solvent effect. A stone placed in pure olive oil, lost 38 per cent. of its weight in ten days; and in pure oleic acid, a stone after losing 63 per cent. of its weight in two days, broke up into small pieces in four. In a 5 per cent. solution of animal soap in distilled water, the stone became coated after a few hours with a bluish-white filmy structure, together with a club-shaped growth of the same nature springing from one of its edges. Gentle agitation removed this excrescence, which was found to consist of the compound formed by the action of the soap solution on crystals of cholesterin, probably of soap in solution in cholesterin (so-called myelin bodies). In whatever way it is accomplished, the fact remains that a solid has become converted into a viscid substance as the result of the action of soap solution on a gall-stone.

It results that it is useless to administer one of the inorganic cholagogues mentioned above with the idea that they will

dissolve a gall-stone; but they are of great use in causing an increased flow of bile, and thus in washing out portions of a gall-stone dissolved by other means. Phosphate or sulphate of sodium are also useful for the same purpose, and further serve as an aperient morning-dose. Belladonna in very large doses is often successful in the treatment of gall-stones, by acting as an antispasmodic. It is generally acknowledged now that cure or improvement frequently follows the administration of olive oil in cases of gall-stones. The author thinks that this is probably due to the antispasmodic action of a large dose of oil, the muscular fibres of the gall-bladder and common duct relaxing, and allowing the stone to escape into the duodenum or to fall back into the bladder. Another explanation he advances from the action of soap and fats on cholesterin. Digested fat passes into the circulation from the intestine as unchanged fat, the corresponding fatty acid, and soap: all occur in normal bile, and the amount present increases with the amount of fat taken in the diet. Oil, fatty acids, and soaps all readily dissolve cholesterin and break up a gall-stone. If then oil, fatty acid, and soap appear in the bile in increased amount after large doses of oil, it is very probable that the gall-stone is attacked by them, and in time dissolved, or reduced in bulk enough to be enabled to be passed out into the duodenum. The objection to the use of olive oil is its extreme unpleasantness when given in large doses of 2—8 oz. One dose in the day is quite sufficient. It may also be injected into the rectum and retained there. From the action of animal soap on gall-stones, the author is inclined to suggest that an increased absorption of animal fat in the form of cream, butter, or fat may be of equal value to olive oil.

The diet should consist of plain food, with abstinence from sugar, starch, and made-up dishes. Alcohol should be taken in the form of light wine only, and never except at meal-times.

Exercise is probably an all-important factor in the treatment of gall-stones.

* * * *

Dr. A. Lockhart Gillespie[1] in a paper on gastric digestion draws the following conclusions: Free HCl is secreted by the gastric glands from the moment of ingestion of food; but during the first stage of digestion, no free HCl is present—it is organically combined with proteid substances, and there are frequently present in addition traces of organic acid. During the earlier part of this stage, the small degree of acidity probably permits the amylolytic action of saliva to go on. Free HCl appears in the stomach at a variable time, between 30 minutes and the second or third hour. In second stage, both free and combined acid is present—total acidity rising. In third stage, total acidity falling. The total solids and inorganic salts

[1] *Edinb. M. J.*, July—Nov., 1893.

diminish per cent. from the commencement. Generally there is a great excess of fixed chlorides at first from the $NaCl_2$ and other chlorides swallowed with the food. Free HCl is seldom over .09 per cent. at any hour after a proteid meal, but may rise to .16 or .2 after one consisting chiefly of carbohydrates. HCl combined with proteids does not lead to heartburn, at least to any appreciable extent; but both free HCl and free organic acids do so. The pain which comes on immediately after food has been taken is probably due to the presence of an ulcer, or of erosions, or is neurotic in origin. Pain coming on at the time when free HCl should first appear in the stomach contents—allowance in calculating this must be made for the character of the foregoing meal—is probably due to this acid. If accompanied with flatulence and heartburn, and occurring at a variable time after meals, some fermentations are to be suspected, and if carbohydrates are badly borne, diminution in secretion of HCl as well.

As to treatment, deficiency of hydrochloric acid is easily remedied for a time by administering the acid by the mouth. By this means the work of the stomach is considerably lightened, and at the same time the cause of the deficiency can be treated, whether it be due to the diminution of chlorides in the blood, to increased alkalinity of the latter, to inflammation of the gastric mucous membrane, or any other of the causes of this condition.

Hyperacidity is of two classes: (1) in which HCl is in excess; (2) in which the organic acids predominate.

The first is in many cases the most difficult to deal with. Alkalies are the worst treatment for both forms of hyperacidity, as they induce the further pouring out of acid. Both ingestion of proteids and dilution of the gastric contents with water may subdue the pain, and reduction of the amount of chlorides in the food may be of service if persevered in. The excess of HCl is an expression of some nervous condition or of an abnormal state of the blood. Careful attention to the diet and general condition is needed. Frequently the liver is out of order, and then dilute nitro-hydrochloric acid and taraxacum help to improve the state of the gastric secretion.

Cases of excess of organic acids are in reality cases of deficiency of HCl, and must be treated accordingly.

If the stomach is dilated or there is chronic gastritis, lavage together with other treatment gives the best results. Gastric ulcer is accompanied by proportional HCl hyperacidity, and is to be treated accordingly. Finely divided and bland proteids by the mouth are well tolerated in many cases, the formation of proteid hydrochlorides tending to diminish pain. Milk should only be given in very small quantities. Very frequently intestinal dyspepsia arises from erroneous gastric processes, and may be cured by careful attention to the disordered gastric digestion.

* * * *

Writing on diarrhœa Dr. Lauder Brunton[1] deals first with the subject of "morning diarrhœa." If we take a purgative overnight and a large draught of hot or cold water next morning, the course of events is as follows: During sleep the purgative lies in the stomach, or only proceeds some little way down the intestine; but on awaking, the movements of the alimentary canal again become brisk, and being increased by the purgative, both it and the water are hurried along through the stomach and small intestine and poured into the cæcum. They thus start increased peristaltic action in this part of the bowel, which continuing along the colon will hurry them on to the rectum. M. Chauvet thinks that in the causation of the loose motions in morning diarrhœa, the stomach-contents play a similar part to that of the purgative. In most cases the stomach is dilated, and the food instead of being expelled through the pylorus a little at a time, as it ought to be, lies in the dilated organ during sleep, and on awaking is poured out into the small intestine *en masse*, and quickly passes on to the rectum in the same way as the purgative. It is not always necessary for the patient to get up for this to occur, simple change of posture in bed may be sufficient. In Dr. Brunton's opinion, although dilatation of the stomach is present in some cases, yet morning diarrhœa is usually dependent upon an irritable condition of the sigmoid flexure or even of the rectum. Sometimes there may be only chronic inflammation or congestion; at others, actual ulceration. Unless the sigmoid flexure shares in the peristaltic movements, no action of the bowels can occur. From its letter S shape, it acts like a trap to prevent too rapid descent of the intestinal contents into the rectum; and if it remains quiet, no evacuation will take place although the rest of the intestine be in active movement. Should the sigmoid flexure, however, be irritable, and especially if ulcerated, the contents of the transverse and descending colon when poured into it will be apt to excite peristaltic movement and ejection of its contents into the rectum.

In the treatment of morning diarrhœa, all the factors that may contribute to its causation must be taken into account. For diet, entire abstinence from liquids after five, six, or seven p.m., *i.e.* for twelve or fifteen hours before the attack usually comes on, is advisable. A glass of wine may be allowed at dinner, if the patient finds this abstinence burdensome; but no soup or other liquid, and no aerated waters at night. If this limitation is insufficient to check the diarrhœa, the quantity of fluid during the earlier part of the day should be restricted, so as to lessen the amount of water in the body generally, and thus increase the rapidity of absorption. In addition, the irritability of the intestines may be lessened by the administration of such remedies as bismuth and soda, combined with carminatives and aromatics. In obstinate cases the most useful remedy is massage and kneading of the intestines.

[1] *Quart. M. J.*, Jan., 1894

For the treatment of ulceration, Dr. Brunton employs a modification of Dr. Allingham's ointment introducer, to the point of which a long rubber tube is affixed, which may be passed from 8-16 inches or more into the bowel. By turning the screw with which the instrument is furnished, and at the same time withdrawing the tube, the ointment can be applied to the bowel for a considerable distance.

Massage is also useful in that kind of diarrhœa called hill diarrhœa or sprue, to which Dr. Thin has given the name of psilosis. In this disease the best treatment, and indeed the only treatment that is likely to cure, is the exclusively milk diet advised by Sir Joseph Fayrer.

In all cases of chronic diarrhœa it is advisable never to omit an examination of the rectum, because thereby disease may be discovered in time to allow of its removal by operation.

Dr. Brunton gives a useful diet table for the treatment of such cases, the essential points in which are that all food is to be soft and finely divided, capable of passing through a hair-sieve, and that skins, bones, stringy substances, and stones of all kinds, *i.e.* in fruit, vegetables, and fish, are to be carefully avoided.

* * * *

Drs. Bourneville and Paul Cornet have treated thirty cases of epilepsy by subcutaneous injections of testicular fluid,[1] and have arrived at the following conclusions:

(1) Deducting 2 cases, there remain 28 persons who were submitted to the treatment for a sufficient length of time to form a fair test of its value in epilepsy. According to d'Arsonval, if after six weeks there is no result, it is useless to persevere longer.

(2) Of the 28 cases, in 8 there was slight diminution of the fits. In the other 20 the number of fits was increased. Cases with mental failure were selected in order that a better idea might be gained of the action of the testicular fluid in promoting mental improvement. In none of them did the intellectual state show any amelioration.

(3) These results, which conform to those of M. Féré, are contradictory to those published by Prof. Pierret in a thesis by one of his pupils.

(4) In 6 cases there was a decided increase in the body-weight during treatment; in 3 others, a diminution; and in 1 it was unchanged.

(5) The injections, which were carefully carried out, gave rise to no local troubles.

J. Michell Clarke.

[1] *Progrès. méd.*, Dec. 9 and 16, 1893.

SURGERY.

Rotary-lateral curvature of the spine was recently made the subject of an address by Dr. Teschner.[1] In etiology, he directs attention, more especially, to the following points: (1) An hereditary tendency, which he believes to exist; (2) the general temperament, and the condition of the mind and nervous system, as shown in an apathetic and indolent habit, mental slowness, and a peculiar lack of co-ordinating or muscular control, one result of which seems to be an apparent inability to fully extend any extremity; (3) the lack of muscular development, affecting chiefly the muscles of the back, chest, and abdomen; and a poor general physical condition, of which indigestion may be a factor; and (4) the important influence of habitual faulty positions—especially as affecting school-girls. In discussing the treatment to be adopted, he recognises three degrees of the deformity:

I. "Habitual" curvatures—*i.e.*, cases in which the deformity can be obliterated by voluntary muscular efforts. He insists on the importance in these, as in all cases, of improvement of the general health, fresh air, and, in children, of removal from school, as necessary preliminaries and auxiliaries to any treatment directed more especially to the local conditions. Towards the remedying of these latter, he recommends frequent short periods of rest (5—15 minutes at a time)—the patient to be lying supine, with the legs fully extended, and the arms raised above the head; self-suspension, by means of a head-swing and pulley, till the toes just touch the ground, twice daily; the employment of exercises while suspended from a horizontal bar, or from rings; and the use of a specially-constructed chair.[2]

II. Curvatures which are not affected by muscular efforts, but which can be reduced, or obliterated, by suspension. In these cases, in addition to the general treatment called for in all alike, he finds it beneficial to apply a light, well-fitting plaster-jacket while the patient is suspended, which, however, is only to be worn until she is so far improved as to be able to correct the remaining deformity by muscular efforts—a result which may be obtained with one jacket, or only after several have been successively applied.

III. Curvatures which are not corrected even by suspension. Here he suggests daily forcible twisting of the spine and compression of the prominent ribs. This is the class of case (if any) in which some carefully-adjusted apparatus is suitable; and Dr. Teschner alludes to one devised by Dr. Hoffa, of Würzburg, which, he thinks, promises well. Dr. R. H. Sayre, when obliged to use a support, applies a plaster-jacket during suspension, which is subsequently cut down the middle and

[1] *Med. Rec.*, vol. 44, 1893, p. 774. [2] *Ibid.*, p. 776.

supplied with lacings.[1] This is taken off at night and re-applied in the morning while self-suspended, and the prescribed exercises are carried out at these times. He maintains that by this line of treatment even advanced cases may be successfully treated, the successive jackets showing less and less deformity. While fully admitting the principles so ably set forth by these observers, it may legitimately be doubted whether they are applicable, in their entirety, to the majority of patients. In the treatment of such cases, I have tried to urge the necessity of: (1) An abundance of the most nourishing and easily digested food; (2) a very large amount of sleep—or, at least, recumbency—at night, the patient learning to sleep on her back and without a pillow; (3) recumbency, in the same position, for 1½—2 hours daily, either at mid-day or in the early afternoon; (4) as much fresh air as possible, with ordinary calisthenic exercises—with or without the use of dumb-bells—both to be indulged in, short of fatigue. In his paper already referred to, Dr. Sayre gives a detailed account of the exercises he employs, which, though they seem admirably conceived, are yet too complicated for general use. Swimming, in suitable cases, is always advantageous, is generally practicable, and may be made (if carefully undertaken) to fulfil many of the indications of his scheme.

* * * *

Mr. Thorburn gives a summary of the results he has arrived at with regard to the sensory distribution in spinal lesions.[2] While largely confirming what he has already published in previous papers[3] and in his book,[4] he adds something more. He refers, at the outset, to the work of Dr. Head,[5] which demonstrated "that various visceral diseases have associated with them certain definite and constant areas of cutaneous tenderness," the conclusion being drawn that "these areas represent the cutaneous distribution of the pain-appreciative or algetic fibres of each serial spinal segment." Dr. Head's areas agree, in the main, with Mr. Thorburn's anæsthetic areas, the most striking difference consisting in the sharp delimitation of the former compared with the fading margin found in the latter. Dr. Head explains this discrepancy by supposing that his areas represent the distribution of "nerve-segments" and not of "nerve-roots"; and Mr. Thorburn expresses his belief that when, in spinal injuries, the nerve-roots escape (a rare event), the anæsthetic margin is more sharply defined. In passing to the subject-matter of his paper, Mr. Thorburn reminds us of two very important generalisations: (1) that in most crushing lesions of the cord there is coincident injury to one or more

[1] *N. York M. J.*, vol. xlviii., 1888, p. 533. [2] *Brain*, vol. xvi., 1893, p. 355.
[3] *Brit. M. J.*, 1888, vol. ii., p. 1382, and 1889, vol. i., p. 993.
[4] *Surgery of the Spinal Cord*, 1889.
[5] "On Disturbances of Sensation, with especial reference to the Pain of Visceral Disease." *Brain*, vol. xvi., 1893, p. 1.

pairs of nerve-roots at their exit from the canal, and that consequently, as the nerves slope down to the intervertebral foramina, the line of anæsthesia will be higher than corresponds to the cord-lesion. (2) That in lesions of the cauda equina, where the resulting paralysis of sensation or motion is incomplete, the most centrally-placed (*i.e.* the lowest) nerves will be those affected. He then states his conclusions with regard to the sensory distribution in the upper and lower extremities. In the former case, the distribution seems to be fairly well established.

1. The 5th cervical root supplies the region over the deltoid, and the outer aspect of the arm and forearm as far as the styloid process of the radius.

2. The 8th cervical and 1st dorsal roots supply the inner side of the arm and forearm, as far outwards, both in front and behind, as a line drawn down the centre of the limb to the styloid process of the ulna, and the little finger and inner side of the hand.

3. The intermediate roots of the brachial plexus supply the regions lying detween these two distributions, probably in like vertical strips.

These conclusions are confirmed by Starr[1] and others.

In the case of the lumbo-sacral distribution there is much more uncertainty and diversity of opinion; and here Starr[2] differs considerably from him. Mr. Thorburn, however, has been confirmed in his previous deductions, and gives a diagram in illustration of them, which may be interpreted as follows:

The 1st lumbar root supplies a strip of the abdominal wall, above and parallel to Poupart's ligament.

The 2nd supplies the upper and outer part of the thigh, extending, apparently, to the outer part of the buttocks and back of the thigh.

The 3rd supplies the larger part of the front of the thigh, internal to, and below, the last.

The 4th supplies the anterior part of the knee and leg, and the thigh on each side of the 3rd root-area.

The 5th supplies the outer aspect of the leg in front and behind—the dorsal aspect of the foot (except on the extreme inner edge)—and its plantar surface in a line with the little toe.

The 1st sacral nerve-root supplies all the sole of the foot (with the above exception), and the inner edge of the dorsum, and the heel and back of the leg, for a variable distance, up the inner and outer sides of the calf, embracing the 2nd sacral nerve-area.

The 2nd supplies a narrow strip on the back of the thigh, knee, and leg.

The 3rd supplies the central part of the buttock and the adjoining part of the thigh.

The 4th and subjacent roots supply a saddle-shaped area in

[1] *Am. J. M. Sc.*, vol. xcv., 1888, p. 463, *et seq.* [2] *Ibid.*, vol. civ., 1892, p. 15.

the perineum and contiguous parts of the thigh, and the external genitals.

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The course, under any form of treatment, of many cases of spina bifida, and the allied cerebral tumours, is so unfavourable that we are in some danger of adopting an undiscriminating attitude of expectancy, and so of failing, in some cases, to secure for the patient the advantages of a carefully-conducted operation. In recording a case of spina bifida successfully excised from a man, aged 35, Mr. Mayo Robson[1] recapitulates the following points with regard to the operation: (1) That the meninges should be closed by bringing together the two serous surfaces, and the skin incision so arranged as not to be superimposed upon the meningeal. (2) The great importance of asepsis. (3) The success which attends the plastic operation in cases which are not amenable to any other—*e.g.*, where the coverings are thin and the spinal opening large.

He divides the cases into three classes:

1. Where no operation should be undertaken: (*a*) Where there is a long fissure in the laminæ; (*b*) where a large sac, communicating by a large opening with the spinal canal, is covered with a thin membrane all over; (*c*) where complete paraplegia is present.

2. Where no operation is required, the sac being small and covered with a dense firm skin.

3. Where some operation is justifiable.

The nature of the covering, the size of the opening into the spinal canal, and the contents of the sac modify the operative procedures. When there is fairly normal skin covering the tumour, it is dissected off, as one or two flaps, and adjusted as described above; but if the covering is entirely membranous (and operation is thought advisable), sliding-flaps must be obtained from the surrounding normal skin. When the neck of the sac is small, this may be simply ligatured; but if of any considerable size, the opening must be sutured. If the cord or any of the nerves are present in the sac, they may be gently separated and replaced in the canal by means of a probe; or should they be too firmly adherent to the wall of the sac, this must be replaced bodily. Mr. Robson points out the necessity of applying a silver or leather shield subsequently, to prevent injury or yielding of the cicatrix. In his address at the International Medical Congress, at Berlin, in August, 1890, Prof. Horsley[2] advocated the surgical treatment of such cases. For encephalocele, he recommended electrolysis (if small) and excision (if larger); for cerebral meningocele, tapping or excision; and for spinal meningocele, injection of iodine, or excision. Dr. Herrick reports[3] a case of spina bifida (meningo-

[1] *Lancet*, 1893, vol. ii., p. 741. [2] *Brit. M. J.*, 1890, vol. ii., p. 1286.
[3] *N. York M. J.*, vol. lviii., 1893, p. 793.

myelocele) in a child six weeks old, measuring four inches in its largest diameter, which he excised. Some very large nerve-filaments were found in the sac, which were dissected off the wall and restored to the canal; the sac was simply cut away and the skin closely sutured over its neck, and the dressings firmly bandaged on. This child was well six months later. Dr. Monod successfully operated upon a thin-walled sac, which was on the point of bursting, immediately after birth.[1] He has collected 30 cases of cure after excision. Jalaguier[2] cured a case of spina bifida by excision. Dr. Sloan has published[3] some details of a very interesting case of occipital meningocele. It increased rapidly in the three weeks after birth, measuring finally $6\frac{3}{4}$ inches in circumference. It was covered with normal scalp, was slightly reducible on pressure, and was associated with a large anterior fontanelle and a high forehead. After very careful disinfection of the scalp, the sac was exposed, an Esmarch's tourniquet was drawn tightly round the pedicle, and the tumour excised. The tourniquet was left on under the antiseptic dressings for twenty-four hours, and was then taken off under chloroform. There was a gush of fluid, but the edges of the dura mater were rapidly united by a continuous suture, and a strong catgut ligature was tied round the pedicle above the sutures, to make all secure. The progress towards recovery was steady, and eight months later the child was quite well and seemed to possess average intelligence.

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Dr. Chaplin[4] contributes a paper on the surgical treatment of tubercular pulmonary cavities, in which he states the conditions that appear to him essential for any chance of success, and then discusses how far these favourable conditions can be ascertained beforehand, and, granting their presence, how far any operation is likely to prove beneficial. The conditions he lays down as essential are: (1) The excavation must be the chief source of the patient's symptoms. (2) The cavity must be single. (3) The walls must be free from tuberculous infiltration. (4) There must be no tuberculosis in other parts of the lung, or in the opposite lung. He also mentions that, as is well known, basic cavities are by far the most favourable for any operative treatment, both because of their more accessible position and because in them the tubercular process is more likely to be limited and chronic in its course. Also an old cavity is, *ipso facto*, better surgically than a recent one; and the presence of isolating pleuritic adhesions are a great advantage. As to the diagnosis, Dr. Chaplin states that it is often impossible for the physician to decide, not only whether there is active mischief in other parts, but even whether the signs present indicate consolidation or excavation; or to say whether

[1] *Brit. M. J.* (Supplement), April 16, 1892. [2] *Ibid.*
[3] *J. Am. M. Ass.*, vol. xxi., 1893, p. 892. [4] *Practitioner*, vol. lii., 1894, p. 1.

the cavity is single or only one of several. Mr. R. J. Godlee, in his exhaustive Brompton lectures,[1] noted the same difficulty, and mentioned a case[2] where the clearest signs of a cavity were misleading; and another even more remarkable instance, in which an operation was undertaken for a bronchiectasis in one lung, and where several large cavities of the same nature were undiscovered (after examination) in the other.[3] In answer to the question of the benefit to be looked for in a successful operation, Dr. Chaplin expresses a doubt as to whether a tubercular cavity is ever the chief source of the patient's trouble. A cavity of any size, he maintains, is generally an old one, and is the evidence of a successful effort of nature to eliminate a tubercular focus, and therefore must be inert and harmless. Where, on the other hand, there is tubercular infiltration around such a cavity, this is untouched by the incision made into it. Finally, he suggests the conclusion that no operation will check the disease or its tendency to recurrence; and that if signs of constitutional disturbance are present with evidence of a cavity, they are probably the result of an active tuberculosis, and are not due to the excavation. The experience of others in this field has not been much more encouraging. Mr. Rickman Godlee quotes four cases treated by Dr. de Cérenville, of Lausanne,[4] by Estlander's operation; but the only case in which temporary benefit resulted died of the original phthisis in five weeks. Mosler, Fenger, and Hollister are strongly opposed to the opening of tubercular cavities—at least, until a specific tubercular bacillicide can be found.[5] His own conclusion is that "tubercular cavities should only be opened in cases where the cough is harassing and the cavity single.[6]" If the operation is undertaken, the following points are worthy of consideration:

(1) The anæsthetic is always a matter of anxiety. Chloroform is probably the safest on the whole, but should never be given so far as to abolish the power of coughing, in case of the entrance of blood or pus into a bronchus; and in some cases general anæsthesia cannot be risked at all. (2) The cavity should be opened freely and a long drainage-tube inserted, which is to be kept in till the discharge has almost, and the expectoration quite, ceased, while the temperature remains low. (3) If no pleuritic adhesions are present, the lung must be sutured to the parietal opening, and, in order to do this, it will be necessary to excise a portion of one or more ribs.

W. M. Barclay.

[1] "Surgical Treatment of Pulmonary Cavities." *Lancet*, 1887, vol. i.
[2] *Ibid.*, p. 512. [3] *Ibid.*, p. 716. [4] *Ibid.*, p. 458. [5] *Ibid.*, p. 458.
[6] *Ibid.*, p. 718. See also "Discussion on Surgery of Thorax." *Brit. M. J.*, 1892, vol. ii., pp. 831–2.

OTOLOGY.

In the year 1887 I reported in this *Journal*[1] a case of septic thrombosis and phlebitis of lateral sinus following middle-ear disease, which went on to a fatal termination, as all cases of the kind did at that period. But in the preceding year Mr. Victor Horsley had made the valuable suggestion[2] that ligature of the internal jugular vein might arrest the flow of septic material into the blood; and in April, 1889, Mr. Arbuthnot Lane[3] reported a case of purulent thrombosis of lateral sinus in a boy aged 10, in whom he ligatured the internal jugular vein, and the boy made a rapid recovery.

In 1890 Mr. Ballance[4] read a paper before the Medical Society of London, wherein he recorded four successful cases of this kind, accompanied by some very valuable rules and suggestions as to the management of this hitherto very fatal class of cases. Since that time, many other surgeons—especially Macewen and Barker—have recorded cases and formulated rules, so that at the present time our knowledge of the symptoms and our method of dealing with septic thrombosis of the lateral sinus are as perfect as in any other surgical malady that may be named. The literature of the subject has been somewhat extensive during the past year, but I have selected the three following cases as among the most instructive.

Dr. John L. Adams, of New York, describes a case[5] of thrombosis of the lateral sinus where Ballance's operation was performed by Dr. Abbé. The patient, a girl aged 20, had suffered from a purulent discharge from the right ear two years previously, followed by continuous slight discharge until four weeks before the present illness, when it entirely ceased. Seventeen days before admission she began to have headaches, and ten days ago the right ear and right side of the head began to be painful. Repeated attacks of shivering and vomiting followed, and the head-pains became very severe. On examination, a perforation was found in the right drum-membrane. There was marked mastoid tenderness, with some induration, and a small amount of pus was found in the external auditory canal. Pain was experienced at back of neck upon moving the head, but there was no œdema of neck or in region of jugular vein. The temperature was 101.2° and the pulse 76. The mastoid antrum was first opened and a free communication established with the drum cavity. The symptoms became more severe next day, and the temperature reached 103.5°. Convergent squint and paresis of sixth nerve were noticed. The rigors were intensified, and the patient became drowsy and stupid.

The diagnosis of cerebral abscess was then made, and a

[1] Vol. v., p. 37. [2] *Tr. Clin. Soc.*, vol. xix., p. 290. [3] *Ibid.*, vol. xxii., p. 260.
[4] *Lancet*, 1890, vol. i., p. 1057. [5] *Arch. Otol.*, vol. xxii., no. 2.

trephine-hole over the temporo-sphenoidal lobe was established, through which needles were thrust into the brain substance without finding pus. The lateral sinus was then opened by another trephine-hole, and the sinus was found slightly pulsating, thickened, and inflamed. The internal jugular vein was ligated in the neck, after which the foul septic thrombus was washed out of the lateral sinus. The patient did not recover, and an autopsy revealed circumscribed suppurating meningitis resulting from middle-ear disease. The operation would probably have been successful had it been performed earlier.

Messrs. Bernard Scott and Arbuthnot Lane report a case[1] of subdural abscess in posterior fossa, with septic thrombosis of lateral sinus, treated successfully by a similar operation. The patient had suffered from otitis media for four years. At intervals there were attacks of pain in the ear and in the mastoid process and its vicinity, together with headache on the same side of the head. The attacks of pain increased in severity until May 29th, when the patient became suddenly worse and had a rigor. On the 31st there was another rigor, the temperature rising to 104.5°. Mr. Scott diagnosed septic thrombosis and called in Mr. Lane, who operated on June 2nd. Some small cancellated spaces filled with pus were found in the mastoid process, and the antrum was enlarged and filled with foul-smelling pus. On freely exposing the dura mater of the posterior fossa, a large subdural abscess was opened. This abscess extended over the lateral sinus for about an inch and a-half; the wall of the sinus was, like that of the adjacent dura mater, much inflamed. Bone was freely removed with the gouge, until the sinus was fully exposed for more than two inches. The internal jugular vein was then tied in the neck, and the wound closed accurately with a continuous suture. The inflamed wall of the lateral sinus was cut away with scissors up to the torcular margin, when a large conical clot about an inch and three-quarters in length was pulled out of the sinus and internal jugular vein, into which it extended. Bleeding was stopped by plugs of iodoform gauze, and the contents of the middle ear were removed by a curette. Recovery was uninterrupted.

Dr. Urban Pritchard and Mr. G. L. Cheatle also report a successful case of this operation.[2] The patient was a girl, aged 13, who had suffered from purulent discharge from the ears during infancy and early childhood, but had been free from any ear-trouble for several years. Eight days before being seen, earache and headache on the left side came on without obvious cause, accompanied with pain in the left side of the neck on movement. These pains gradually increased in severity, became constant and agonising, and prevented sleep. Vomiting was an early and distressing symptom. Rigors developed—sometimes two or three a day,—and twitchings of the right leg were said to

[1] *Lancet*, 1893, vol. i., p. 138. [2] *Ibid.*, p. 471.

have been noticed during sleep. The patient was restless, but answered questions quite reasonably and connectedly. There was no redness, swelling, or œdema of or about the ear, but percussion two inches and a-half behind the pinna gave rise to pain. The upper part of the neck was somewhat swollen, but fluctuation could not be detected. The temperature was 102°, pulse 116, respirations 44.

Mr. Cheatle decided to operate upon the following lines: (1) To chisel into the mastoid antrum; (2) if necessary, to open up the mastoid cells; (3) if nothing to account for the symptoms could then be found, to chisel backwards and open up the lateral sinus. On the first introduction of the chisel into the antrum, pus bubbled out with the blood. The opening thus made was enlarged and a few streaks of pus were evacuated. The bone-opening was next enlarged upwards and backwards, and an exploratory needle passed into the brain substance without result. The lateral sinus was then exposed and found to be blocked with a fœtid clot; so the internal jugular vein was divided between two ligatures, and the fœtid clot scraped out from the lateral sinus which was syringed with perchloride of mercury solution.

Three days afterwards, in consequence of a continued elevation of temperature, the lateral sinus was still further scraped out and its outer wall completely removed; the upper part of the jugular vein was likewise dissected out, after which the patient made an excellent recovery.

W. H. HARSANT.

Reviews of Books.

A Text-book of the Theory and Practice of Medicine. By AMERICAN TEACHERS. Edited by WILLIAM PEPPER, M.D. Vol. I. Pp. xii., 909. Philadelphia: W. B. SAUNDERS. 1893.

Thirteen teachers of practical medicine in the leading schools of America have associated themselves in the production of a volume which represents truly the best teaching of the science and art of medicine at the present time. They have given us nearly a thousand pages, in the best of type, with 58 figures and three large plates, but worthy of a better binding. It is difficult to criticise a volume of this kind, in which eminent specialists express their opinions with authority. The reviewer can only sit at their feet and learn.

The first article is by Dr. J. S. Billings, on the subject of

"Hygiene," including disinfection, isolation, and other principles of preventive medicine.

Dr. William Pepper's article on "Typhoid Fever" extends to 81 pages, and is one of the most complete accounts on record; but we venture to think that phenacetin deserves to be dissociated from antipyrine and acetanilide, and to be given more freely and vigorously. Of the intestinal antiseptics preference is given to nitrate of silver, which in doses of one-fourth of a grain is considered to be a useful part of the regular treatment of typhoid. Turpentine, as a powerful antiseptic and a good stimulant, is believed to be of unquestionable value, whilst calomel in purgative doses is totally objected to. Various intestinal antiseptics are mentioned as having been advocated, but carbolic acid is not one of them; and the writer, appearing to have had little experience of any, is a little incredulous as to their value.

The various exanthems are well described by Dr. James J. Whittaker, who declines to mention antiseptic inunction in scarlet fever, and states that the treatment is wholly symptomatic.

Dr. Gilman Thompson describes diphtheria, which he treats as an acute, infectious, inoculable disease, developing a local lesion at some period of its course; but only in exceptional cases does the local lesion first appear. Further researches appear to have shown that the local focus is the disease itself, and that inoculation of the system as a whole need not occur if the local lesion be recognised and treated with vigour.

Dr. Horatio C. Wood's articles on "Various Diseases of the Nervous System," and those of Dr. Wm. Osler on "Diseases of the Spinal Cord, the Nerves, and the Muscles," form a fairly complete and trustworthy outline of our available knowledge of the topics with which they deal.

We know no text-book in the English language which could be spoken of as better than the first of the two volumes which are to comprise this work.

A Medical Hand-book for the Use of Practitioners and Students. By R. S. AITCHISON, M.B. Pp. xii., 347. London: CHARLES GRIFFIN & COMPANY, LIMITED. 1893.

While we have a strong belief in the utility of abstracts made by the reader himself in order to aid his memory, classify his facts, and assist revision, we do not think that abstracts made by other people are of much real service, and therefore we do not greatly favour the multiplication of small "hand-books" and abstract-books. The use of such "royal roads to learning" generally ends in giving a mere smattering of a subject, without any real knowledge of it. So far, however, as the present work is concerned, it seems to us to be well done,

and free from most of the faults of these books. We have found the information given to be accurate, clearly put in a short compass, and the most important facts are given due prominence. Students beginning their duties as clinical clerks would find it helpful if used with, and not as a substitute for, the standard text-books.

Psychopathia Sexualis: A Medico-Legal Study. By D. R. von KRAFFT-EBING. Authorised Translation of the Seventh Edition, by CHARLES GILBERT CHADDOCK, M.D. Pp. xiv., 436. Philadelphia: The F. A. DAVIS COMPANY. 1893.

This work by the eminent professor in the University of Vienna, better known on the Continent than here, was written to set forth the pathological manifestations of the sexual life, and to attempt to view them from an alienistic point of view, and thereby to find excuses for those strange perversions of that life which from time to time force themselves on public attention, but are well known in the experience of the medical jurist.

It cannot be denied that scientific men have an undoubted right and prerogative to inquire fully into all the strange and curious problems connected with life in its manifestation in the human body, as well as in the mind. Of old time all learned scientific books were written in a dead language "not understanded of the common people"; and, indeed, it is not so long ago that treatises on subjects which it was not desirable should meet the eye of the uninstructed, or of the ordinary reader, were still so veiled. "Democritus Junior," when writing his wonderful work, *The Anatomy of Melancholy*, and treating of "Love Melancholy," was careful to decently clothe his "Subject II." in Latin. In the book before us certain words or small passages are in Latin; but perhaps it would have been better had the greater part of such an extremely unpleasant and repulsive investigation of the morbid deviations of the genital instincts been put into the same language. Especially would this seem to have been needed when we read in the preface that the original work has reached its seventh edition, and it is admitted that such circulation is not a legitimate one, but due to a pornographic interest on the part of the public.

The chapter on "The Psychology of Sexual Life" is an interesting one, and the inquiry into the pathology of the subject opens up some abstruse points. Charcot and Tardieu, as well as many others, have written, and written well, upon these subjects. With regard to this and other chapters the facts must be admitted, but the conclusions drawn must be liable to grave questioning,—as in the case of what the author

terms "sexual inversion," and whether it should be treated as a disease or a crime; and where it is urged that some such instances of human depravity should be accepted as being beyond control, and be admitted as necessary conditions of human life, it cannot be conceived that such conclusions could be accepted amongst us. Human passion, when not educated and brought under proper control—whether that control be such as all right-minded men acknowledge as in accordance with the dictates of reason, or whether it be such as has its origin in Divine command,—will run riot, and bring about the mental and moral degradation of the individual; and it seems incredible that if one passion of a base sort is thus allowed to run riot, that Society would be long without allowing others to go that way also. Several cases of pure mental disease, such as are well known and recognised by alienists, are brought forward in this work; but it seems hardly possible that numbers of the other cases given can be classed as other than pure want of moral control due to the negligence of the ordinary rules of chastity and purity.

The book concludes with some short references to the bearing of these cases on jurisprudence.

Traitement chirurgical des Affections inflammatoires et néoplasiques de l'Utérus et de ses Annexes. Par E. DOYEN. Pp. 128. Paris: BUREAUX DES *Archives provinciales de Chirurgie.* 1893.

This work, which is based upon 324 operations on the uterus and its appendages, has been revised and enlarged since its original appearance in the *Archives provinciales de Chirurgie* in 1892.

The author has for some time past made a point of examining the exudate in cases of pelvic inflammatory mischief, and finds that the most frequent organisms are the streptococcus and the gonococcus.

The work is mainly divided into two portions—the first treating of inflammatory affections, and the second of new growths. For inflammatory mischief, the author strongly urges vaginal hysterectomy as the operation best suited to most circumstances, although he admits that in certain well-localised perimetric inflammations a simple incision in the inguinal region (sub-peritoneal) would meet the case; and that laparotomy is very good when the affection is unilateral and without many adhesions, and for painful retroversion without metritis or severe lesions of the appendages.

So firm is the author's belief in the superiority of vaginal hysterectomy for these inflammatory lesions, that he almost disarms criticism by stating, like Segond, that the opponents of

this method are "*ceux qui la connaissent le moins.*" Had it not been for this statement, we might have been bold enough to have expressed our conviction that the treatment which he advocates is not always so desirable or necessary when other less dangerous procedures would fulfil the indications for operation.

In the second part of the book, which is devoted to new growths, the author describes his operations for abdominal and vaginal hysterectomy. These are novel in many points and well worth consideration. Their description is accompanied by figures and diagrams, which elucidate the text and enhance the value of the work.

A Text-book of General Therapeutics. By W. HALE WHITE, M.D. Pp. xi., 371. London: MACMILLAN & Co. 1889.

This excellent book has been but recently forwarded to us for review, although published more than four years ago. Without at this date venturing to enter upon detailed criticism, we can thoroughly recommend the work as far as it goes. Withal it is comprehensive enough, including in the subjects treated of such topics as climates, mineral waters, baths, non-medicinal antipyresis, electricity, hypnotism and some others, all well but not voluminously dealt with. Therapeutics exercised by means of drugs Dr. Hale White does not here include, as these are discussed in a separate work. Without going so far as to say that the book is the best in its own special line, yet it is so good as to make us wish that a new edition, thoroughly up to date, should very shortly make its appearance.

A Contribution to the Pathology of the Vermiform Appendix. By T. N. KELYNACK, M.D. Pp. 211. London: H. K. LEWIS. 1893.

This work is based on more than 200 cases of the author's own observation, in addition to a very large number reported by other writers. A considerable amount of confusion has arisen from the use of such terms as typhlitis, and Dr. Kelynack strongly urges that a more exact nomenclature in accordance with pathological conditions is necessary.

In treating of recurrent appendicitis, there is no differentiation made between chronic relapsing appendicitis in which there is no return to absolute good health, and recurring appendicitis in which each attack may practically be regarded as an independent affection.

The chapters on symptomatology and treatment are admit-

tedly brief, and do not add to the value of the work. After so much labour and observation as the author has expended on this subject, we naturally look for some practical results in the general principles of treatment. In this, however, we are disappointed; for it does not appear to us that either the medical or surgical treatment of this important region has been advanced by the pathological observations before us.

The book, however, contains practically all that is known of the normal and morbid anatomy of the appendix, and much trouble has been taken in the collection of statistics. At the end of the volume is a very extensive bibliography.

The Physiologist's Note-Book. By ALEX HILL, M.D. Pp. xii., 200. London: CHARLES GRIFFIN AND COMPANY, LIMITED. 1893.

Dr. Hill, though best known as an anatomist, has conducted for some years a tutorial class in Physiology at Cambridge, in a most successful way. Many an old Cambridge man looks back with gratitude to that class as of the very greatest aid to him, not only in the actual acquirement of facts, which was a small part of the matter, but because he there learned to understand the reasons and values of the facts, and how to systematise and classify his knowledge, to so store it away in his memory that it was always available for use when required.

Of course the value of a note-book lies in its compilation by the user of it himself, but we take it that by this book the author hopes to aid those whom he cannot personally reach. In the preface it is stated that the work is in no way meant to replace larger text-books or practical work in the laboratory, but to supplement these by helping the student to codify his knowledge. All such books have the drawback that they may be used simply as cram-books, and the acquirement of knowledge—if it can be called knowledge—in such a manner cannot be too strongly discouraged. Physiology, too, is the most difficult of all subjects to treat as it is treated in this Note-Book; it is often impossible to adequately discuss all the points about a disputed question in a brief manner under headings of *pro* and *con*. For instance, how difficult it is to give an intelligible account of Nutrition in brief abstract to a second or third year's student!

So far as this book is concerned, the work is well done—in fact, it could not be better done, if the difficulties of the subject are remembered, and that it is not intended for a treatise on Physiology. Taken as a whole, it is up to date in its information, and trustworthy in its statements. The diagrams are to be especially commended; they are clear, and deal in a very helpful way with just the points on which students need elucidation.

Many men have a really extensive knowledge of a subject, but no power of arranging their facts in an orderly manner; we believe a number of very good men fail in examinations simply from this cause, that they cannot get at their facts when they want them. To such men this book will be valuable, used in the way it is intended to be—as a supplement, and as a guide to the intelligent use of the larger text-books.

Edinburgh Hospital Reports. Edited by G. A. GIBSON, M.D.; C. W. CATHCART, M.B.; JOHN THOMSON, M.D.; D. BERRY HART, M.D. Volume I. Pp. xiv., 620, 56. Edinburgh: YOUNG J. PENTLAND. 1893.

When we think of the great part the Edinburgh Infirmary has played in educating generations of medical men, and the prestige it has gained from the traditions inherited from the long series of men, pre-eminent in medicine and surgery, who have served on its staff, it seems somewhat surprising that a hospital of such importance should have hitherto issued no official reports. The editors tell us however that there were difficulties in the way, which have only lately been removed, and now we have a volume representative of the work of three of the Edinburgh hospitals. The medical world will read these Reports with interest, because they will reflect from year to year the character of the work and teaching of the leaders of medical thought in Edinburgh.

A large body of old students must look to their Alma Mater for enlightenment and help, and will expect in these Reports to find records of the progress made in Medicine and Surgery. Nor will they be disappointed if future volumes—and there is no reason to doubt that they will do so—furnish so able and interesting a collection of papers as is gathered together in this first number. It opens, as is fitting in the first of a series, with a short history of the institutions whose work is to be chronicled. We cannot attempt here even to enumerate the number of excellent articles in this book, all of which will repay perusal, and we therefore must content ourselves with cordially recommending it to our readers as a volume worthy of careful study.

We feel sure that the editors will have no reason to regret the issue of these Annual Reports, and that they will have the support of a wide circle of readers.

On Snake-Poison: its Action and its Antidote. By A. MUELLER, M.D. Pp. 85. Sydney: L. BRUCK. 1893.

A portrait of the illustrious author, who describes himself as "an obscure Australian country practitioner" who "succeeded in a discovery for which all his predecessors in this

field of research had laboured in vain," adorns this book. As we have made one quotation, we will indulge in a few more.

"By our united efforts"—for "our" read Dr. Mueller and "his Australian confrères," especially the former—"we have reared in a dark and hitherto barren field of research a column of solid knowledge, and on this column Australia now occupies the highest and will ever occupy the most prominent place." We sincerely hope that she will, and that the new Simon Stylites will be comfortable; meanwhile we confess a curiosity as to the nature of solid knowledge and of the utility of a column in a barren field.

Speaking of his theory that snake-poison paralyses the motor centres, the writer modestly remarks: "This and this only is the condition of the centres, the whole secret of snake-poison that has puzzled the human mind for ages, and yet appears so simple when discovered at last." "Its successful application (*i.e.* of strychnine) as the long and vainly sought antidote to snake-poison are glorious triumphs of scientific deduction."

We expect from an author with an elaborate theory of the action of snake-poison on the nervous system more knowledge of the elements of Physiology than is shown here. He is further not conversant with the latest observations on the chemical constitution of snake-venom, and we are entirely at issue with him when he concludes that chemical and experimental investigation on the subject is valueless. Future research in this direction will probably, as in the case of diphtheria, throw the greatest light on what we must still regard, in spite of the author's all-sufficient theories, as at present a badly-understood subject.

The author should also have shown, which he has made no attempt to do, that the bites of the Australian snakes are generally, or even often, dangerous to life—from other sources we gather that death from snake-bite is rare in Australia, especially in the southern parts of the continent. It does not follow that because patients recover from snake-bites after injection of strychnine, that they would not have recovered without it: at any rate, more evidence is required than he brings forward. We do learn one thing from his observations; and that is, that heroic doses of strychnine seem to be tolerated by persons suffering from snake-bites.

Outlines of the Diseases of Women. By JOHN PHILLIPS, M.D. Pp. xiv., 273. London: CHARLES GRIFFIN & COMPANY, LIMITED. 1893.

This small volume, dedicated to Dr. Playfair, presents us with a good epitome of the modern methods of dealing with diseases peculiar to women, and it may therefore be recom-

mended to the student as serviceable for study, and to the practitioner as useful for reference.

We notice that the author lays it down that "the semen is carried along the Fallopian tubes to the ovary, where the ovum is fertilised, and then carried back along the tubes to the uterus." Is not the uterus alone the seat of normal conception? Is not the function of the ciliated lining of the Fallopian tubes to prevent spermatozoa entering them, and to facilitate the progress of the ovum into its proper nest? It is only in cases where desquamative salpingitis has taken place, destroying the ciliated epithelium, that it would be possible for the spermatozoa to enter the tubes at all.

There are 120 illustrations in this work, most of which are outline drawings by the author. They might be easily copied upon the blackboard by anyone having the most elementary knowledge of drawing. Though they may not all be very artistic, they are useful in rendering clear the meaning of the text.

The Law of Psychic Phenomena. By THOMSON JAY HUDSON. Pp. 409. London: G. P. PUTNAM'S SONS. [1892.]

The main object of *The Law of Psychic Phenomena* is, as its somewhat ambitious title indicates, to provide a working hypothesis in the light of which all classes of mental phenomena shall be interpretable. The main proposition of the hypothesis is that man has two minds—"subjective" and "objective." Mr. Hudson affords us no precise definition of the "subjective" mind; but by means of various scattered remarks we learn that it is an omniscient entity, capable of intuiting fixed laws, independent of brain action, in this life subject to the trammels of sense (represented by the "objective" mind), but rising supreme as the brain becomes weakened and impaired, and finally, with its death, entering on the fulness of immortal life.

It is unfortunate in so good a cause that the theory should include so many mutually exclusive propositions. In the face of recent psycho-physiological researches, it is a little venturesome to maintain that large classes of mental phenomena go on independently of neural processes; but Mr. Hudson does so with an almost wanton lightness. Again, the postulate of intuitive faculties is really not of the axiomatic nature the author would assume.

It would seem that Mr. Hudson has found belief in the immortality of the soul incompatible with that in cerebral concomitants, and that, clinging tenaciously to the former, he has distorted facts and taken up positions which it is impossible to maintain in the light of modern knowledge.

Forensic Medicine and Toxicology. By J. DIXON MANN, M.D. Pp. 639. London: CHARLES GRIFFIN & COMPANY, LIMITED. 1893.

This work is an addition to the many useful works forming the "Medical Series" being issued by the Messrs. Griffin for practitioners and students, and is produced by them in a pleasant type and on good paper.

We presume Dr. Mann's Lectures are the original basis of this work, as it partakes so much of the very necessary compression needed by such a subject for such a purpose. To treat the subject of Medical Jurisprudence fully in all its different branches and ramifications, in a philosophical and thorough manner is a gigantic task, and Dr. Mann's book does not at all pretend to be such a work. It is, however, a careful and conscientious work, which seems to us to have gathered up into each section an accurate summary of the chief facts relating to that particular section. In many ways the work offers a handy book of reference for the general practitioner, although it would hardly take the place of the fuller and larger works on the subject in getting up any difficult case. Its chief use will be for the student, to whom it should prove a most useful book for reading for an examination. Good use has been made in it of English and foreign literature, and all the most recent facts have been collected and placed at the disposal of the student.

On Diseases of the Lungs and Pleuræ, including Consumption. By R. DOUGLAS POWELL, M.D. Fourth Edition. Pp. ix., 600. London: H. K. LEWIS. 1893.

The third edition of this book was published in 1886. No material change in the plan of the work has now been made, but the etiology, pathology, and treatment of consumption have necessarily received a large measure of revision: the author has strenuously endeavoured to withdraw attention from the too exclusively microbic view which the public are coming to hold, and he has endeavoured to point out how easily due measures of prophylaxis may be taken without creating pain or causing needless separation in families. He emphasises the importance of adopting every possible measure of cleanliness with regard to the disposal of the expectoration from phthisical patients, and he recommends destruction by fire as by far the best and easiest way of dealing with the sputum, which in private cases can be simply poured on to the fire, and in hospitals can be placed in some kind of furnace.

Spittoons containing liquids of a more or less destructive

character are in common use in the belief that sputum is only dangerous when dry; but it is far better to do away with the necessity for cleaning these receptacles by adopting the device of the New York Sanitary Supply Company, whose spitting-cup consists of a metal frame, into which fits a stiff paper case, which is easily taken out and thrown into the fire. For out-of-door use, patients are urged to carry Dettweiler's pocket spittoons, which are flask-shaped, and can be easily carried in the pocket. The abomination is the dried handkerchief: these should never be allowed to become dry, but if used at all must be changed frequently, well disinfected, and scalded before going to the wash with other things. These and other precautions must be adopted in the interest of the patient himself, who is the most susceptible to unhygienic surroundings, and is most exposed to the danger of setting up fresh centres of disease by the inhalation of bacillary dust.

The *British Medical Journal* has recently (Sept. 16th, 1893) made enquiry as to the rules adopted at various hospitals, has given a full report thereon, and urges "a consistent and methodical warfare against infectious dust, for which purpose we must insist on the use of the spittoon, the substitution of pieces of paper or of calico, which can be burned, for that horrible thing, the consumptive's handkerchief, the abolition of ornaments and knick-knacks in the sick man's room, and the replacement of the duster by the damp cloth." (*B. M. J.*, Sept. 23rd, p. 696.)

Much reiteration will be needful before these precautions are generally adopted: people will not believe that they are necessary, and will only carry them out when they are insisted on by the medical attendant. Until they are persistently enforced, dried bacillary dust must be as ubiquitous as the disease itself; but if we can "entrap the vehicle of infection, isolation may become as unnecessary as it now appears impracticable."

In the treatment of pneumonia we think that phenacetin deserves a more prominent position than is given to a drug which not only is a more efficient antipyretic than the five-grain doses of quinine which the author advises, but is also a useful anodyne and an efficient diaphoretic. In the absence of any indication for more active interference, a five-grain dose of phenacetin may be given frequently, every three or four hours, and no other treatment may be needful; this will be likely to remove the necessity for the cold pack or the cool bath, and we have never seen any untoward symptoms from its use, even when given in five-grain doses every hour until the temperature had fallen to a safe level.

The author advises small doses of digitalis in various conditions where there may be symptoms of heart-failure, but he makes no allusion to the modern use of large doses of this drug in the way advised by Petresco and others. (See *Bristol*

Medico-Chirurgical Journal, Vol. x., p. 196.) Neither does he mention the utility of chloral hydrate in cases of active delirium, where a few doses of this drug give an exhausted patient a restful sleep, which must favour the maintenance of heart-power, even when given without the digitalis in the combination so strongly recommended by Balfour (*Ed. Med. Journ.*, Nov., 1891). We hold that a rapidly fatal disease with so high a mortality as pneumonia is one which calls for active combat, and in which a venturesome policy is not only justifiable but is urgently needed.

The author sums up the treatment of pleural effusion in a series of excellent rules (p. 113), only one of which do we see any sufficient reason for criticising. The last of them contains the following: "Provided the pus be perfectly sweet, it is, I think, best not at once to operate upon a large effusion by making a free opening. The lung is compressed, and it is better in the first instance to remove a portion of the fluid by means of the syphon, for the double purpose of re-expanding the lung texture and diminishing the cavity of the abscess to be subsequently (within a short time, however) dealt with." We fail to see any necessity for this delay, and have never had reason to regret the practice of free incision as soon as the diagnosis of empyema has been established.

The book, like its author, has a well-founded reputation; it has proved itself to be a necessity to any medical library and a friend to those who consult it.

What to Do in Cases of Poisoning. By WILLIAM MURRELL, M.D. Seventh Edition. Pp. 276. London: H. K. LEWIS. 1893.—This little book is justly popular with the Resident Medical Officers of Hospitals, and unquestionably serves a very useful purpose. But having reached a seventh edition, it should have had the mistakes of earlier issues carefully corrected. We were surprised to find conspicuous errors of grammar and spelling: *e.g.*, pp. 38, 157. More serious is the oversight on p. 131, where for "four minims of laudanum" should be read "one-fourth of a minim."

Mathews' Medical Quarterly: A Journal devoted to Diseases of the Rectum, Gastro-Intestinal Disease, and Rectal and Gastro-Intestinal Surgery. JOSEPH M. MATHEWS, M.D., Editor and Proprietor. Louisville: JOHN P. MORTON & COMPANY.—We have received the first number of this new quarterly medical journal, which we are informed is the only journal of the kind published. It contains no less than 190 pages of reading matter, with nineteen original contributions from well-known surgeons in America. The printing and paper are of the usual Transatlantic excellence, and if forthcoming numbers are up to the standard of this one, it will reflect the highest credit upon editor and publisher. In this country we cannot quite understand the necessity of specializing to the extent now adopted in America. We presume

from one or two paragraphs in this journal that there are numerous surgeons in American cities who devote their practice solely to diseases of the rectum! We can only look on with wonder and astonishment, and ask what will be the next development.

The Year-Book of Treatment for 1894. London: CASSELL AND COMPANY, LIMITED.—We welcome the early appearance of this useful Annual, now too well known to need introduction to medical practitioners. Its scope and general arrangement differ in few respects from the issues of preceding years, but we are glad to note that it has followed the example of the *Medical Annual* by introducing two much needed sections; viz., the medical diseases of children, undertaken by Dr. Dawson Williams, and bacteriology, which has been entrusted to Dr. William Hunter: both these names are sufficient guarantee that these sections are done well. We note with pleasure that Dr. E. Markham Skerritt and Dr. Barclay Baron continue to be responsible for the same sections as heretofore. The general arrangement of the work and the editing as a whole leave little to be desired, but a defective index and the absence of cross-references are faults that might be remedied with advantage. Thus salipyrin is not included among the new remedies; it has two lines devoted to it as an anti-rheumatic remedy, but it does not appear at all in the index.

Transactions of the New York Academy of Medicine. Vol. VIII. Pp. xxviii., 393. 1892.—This volume is full of most interesting and valuable papers. It opens with one by Dr. A. Jacobi on "Cervical Adenitis: its Etiology, Symptoms, and Diagnosis." He comments much upon the statement that "there is no better protection to the system than intact integument;" that cracked lips, every form of stomatitis, the cracked tongue of typhoid, and so on, may be "an inlet to micrococci of all sorts," and that it is this which destroys more patients than the original typhoid infection. An interesting point raised by Dr. Wm. H. Thompson was the question, "Why children should have adenitis nine times to adults once." A paper by Dr. Max Einhorn introduces a new deglutable electrode for direct faradization of the stomach. Dr. H. G. Piffard, on "Lupus," remarks "that we need not, then, be surprised that the lupus yields in a measure to the repeated pyrexiæ induced by the Koch injections." As regards the use of tuberculin in pulmonary tuberculosis, after much evidence from many sources had been adduced, the president, Dr. Alfred L. Loomis, "thought the consensus of opinion was that we had in tuberculin an agent powerful for good and evil, and that it would take a permanent place in the treatment of pulmonary tuberculosis." Dr. R. W. Taylor discusses the question, "Why syphilis is not aborted by excision of its initial lesion with a liberal slice of the surrounding parts." The pathology of the eclampsia and albuminuria of pregnancy is discussed by Dr. R. Van Santvoord,

and the medical and surgical treatment of epilepsy by Dr. B. Sachs. The volume contains an interesting and excellent obituary memoir of Dr. Fordyce Barker, with many other original and valuable communications.

A Practical Text-book of the Diseases of Women. By ARTHUR H. N. LEWERS, M.D. Fourth Edition. Pp. xvi., 439. London: H. K. LEWIS. 1893.—The best evidence of the popularity of Dr. Lewers' book is the rapid appearance of its fourth edition. The author does not introduce much new matter, nor materially alter that which has appeared in previous editions. He now limits the use of solid dilators for the exploration of the uterine cavity to those cases in which dilatation is required shortly after parturition or abortion, which is perhaps rather too narrow a field for their use. This edition is interesting, as lapse of time has enabled the author to follow up and publish the condition of several patients on whom he had performed the operation of supra-vaginal amputation of the cervix uteri, and renders still more instructive the tables of cases which he introduced into his earlier editions, which show very clearly the advantages of performing the above operation in the way he advises. The general arrangement of the book, the thorough and excellent instructions given for case-taking, with its clearness and attention to detail throughout, cannot fail to render it one of the best hand-books of the subject at present published, and particularly valuable to the student of gynæcology.

A Practical Treatise on Materia Medica and Therapeutics. By JOHN V. SHOEMAKER, M.D. Second Edition. Vol. I. Pp. xi., 354. Vol. II. Pp. vi., 355—1046. Philadelphia: The F. A. DAVIS COMPANY. 1893.—Within two years from the date of publication of the first edition, a second has been called for of this truly encyclopædic work. Due advantage has been taken to bring the information on materia medica and methods of treatment up to date in a singularly complete manner, such novelties as chloralose, alumnol, and thyroid extract being treated of in their proper places. As in the previous edition, the first volume is devoted to the consideration of remedial agents not generally classed as drugs, such as electricity, heat and cold, while the second volume is devoted to drugs proper. The drugs are arranged in the alphabetical order of their names, irrespective of their origin or affinity, so that, as in a dictionary, any substance may be found at once without trouble; each volume also is separately and elaborately indexed. We cannot speak too highly of this work, which in its way is far in advance of anything published in this country.

Tooth Extraction. By JOHN GORHAM. Fourth Edition. Pp. xvi., 43. London: H. K. LEWIS. 1893.—This is a most disappointing booklet. By its title and handy size it promises to be useful to the general medical student, and it is quite large enough to convey the few hints which a novice in extraction

needs before he actually starts to perfect himself by practice. But it is misleading. Its tables, professedly to enable the tyro to distinguish between a temporary and permanent tooth, must lead to disaster: Nature—at least, human nature—may conform to generalisations, but not to rules. It is out of date; for it refers to the use of the key, as if this barbarous instrument were to be advocated: nowadays it should not even be tolerated. The book is also dangerous; for the canons which forbid the use of the elevator in the upper jaw, especially for upper wisdoms, were not established without reason. While unnecessarily prolix in some parts—*e.g.*, on the lever forces—the work is wretchedly meagre in others—*e.g.*, on anæsthetics. In so small a book there seems no particular necessity for the introduction of this latter subject; but, being introduced, it should not be summarily dealt with.

The Johns Hopkins Hospital Reports. Vol. III. Nos. 4, 5, 6. Report in Pathology, III. Baltimore: THE JOHNS HOPKINS PRESS. 1893.—The volume now issued contains four articles detailing observations on pathological anatomy, one on the histology of the cerebellar cortex, and one on the action of bacteria on plants. Of the former the most important is, perhaps, that by Dr. Simon Flexner on "Multiple Lymphosarcoma or Hodgkin's Disease," in which the modern tendency to regard this disease as due to the action of micro-organisms is supported by fresh observations and arguments. Dr. H. L. Russell's paper, on "Bacteria in their Relation to Vegetable Tissue," is an account of an elaborate experimental investigation of the results of inoculation of plants with various species of micro-organisms, both pathogenic and non-pathogenic.

Diet Charts. London: H. K. LEWIS.—In these we have a suggestive set of diet tables for handing to patients after consultation. The set includes albuminuria, alcoholism, anæmia and debility, constipation, diabetes, diarrhœa, dyspepsia, fevers, gout, nervous diseases, obesity, phthisis, and rheumatism (chronic). The charts are likely to save much time when full details in the regulation of diet are needed. Such details may not often be essential, but in cases of diabetes, chronic dyspepsia, and obesity they cannot be dispensed with; and these charts, compiled with care, embody the views of the best authors on the respective subjects.

Disinfectants and Antiseptics: How to Use Them. By EDWARD T. WILSON, M.B. 25th thousand. London: H. K. LEWIS.—Dr. Wilson's little hand-card contains in a small space very useful hints for householders in the presence of infectious sickness. These cards deserve a wide circulation.

Ambulance Card. By LLEWELLYN MORGAN, M.D. Liverpool: WINSTANLEY AND WATKINS.—This is intended for the use of ambulance classes. It is a handy table of the symptoms of the different forms of insensibility.

Notes on Preparations for the Sick.

Analgen.—THOMAS CHRISTY & Co., London.—This is the abbreviated name given by its patentee, Dr. Vis, to a new medicine having the following full name and affinities: ortho-aethoxy-ana-monobenzoylamido-quinoline. Its therapeutic action is similar to that of antipyrin. It is said to act promptly as an anti-neuralgic, and to be free from the depressing effects of other drugs of this class. The samples sent to us are elegant preparations in tabellæ and cachets, each of which contains seven grains; the maximum dose is 45 grains daily. Dahl & Co., Bremen, are the manufacturers.

Syrup Yerba Santa Aromatic. Essence of Calisaya.—PARKE, DAVIS & Co., London.—"One of the most excellent properties of **Yerba Santa** is its power of completely destroying the bitter taste of quinine, and the drug is often prescribed with reference to this property alone. It contains a principle analogous to glycyrrhizin, which renders quinine in its presence as tasteless as starch. It appears to act like glycyrrhizin, by producing a peculiar impression upon the gustatory nerves; it does not, as has been stated by some, produce with the quinine an insoluble compound. Unless the mouth is thoroughly rinsed after taking the mixture, a bitter taste will gradually develop as the nerves recover from the influence of the Yerba Santa."

The **Essence of Calisaya** is an excellent preparation of bark, each ounce representing forty grains of cinchona calisaya.

"Plastic Pills." Cachet Pills. Perles. Flexible Gelatine Capsules.—DUNCAN, FLOCKHART & Co., Edinburgh.—Samples of these have been forwarded to us. Our only regret is that such excellent preparations cannot always be obtained at the moment when they are most required.

Essence of Beef. BOVRIL LIMITED, London.—**Essence of Beef.** THE VIKING FOOD & ESSENCE COMPANY.—These beef essences are prepared from the best-quality beef, extracted without addition of water at a gentle heat. They must be nutritious, and require no digestion: they are therefore useful restoratives in cases where stimulating nourishment is needed for the purpose of counteracting nervous exhaustion and other varieties of asthenia.

Triticumina.—A. MEABY, Reading.—Bread made from this preparation has been brought to our notice by Mr. Henry Jones, of Broadmead, Bristol. The special features in its manufacture are, that the whole of the wheat grain is utilised, and that the bran is so finely divided that it does not cause any irritation of the alimentary canal. The wheat undergoes a malting process at specially ascertained temperatures, ensuring the conversion of a considerable proportion of the starch of the grain to dextrine. The flavour is highly palatable, and the bread retains its moisture to a marked extent. The valuable constituents of the bran are rendered assimilable by its being ground extremely fine. The bread should be easy of digestion, and must have a high nutritive value in comparison with the ordinary white breads. From the point of view of the physiologist this bread is an ideal preparation, but mankind usually requires education before it duly appreciates the ideal. It should be especially useful to the corpulent and to the diabetic patient.

Specialité Lime Juice Cordial. Lemon Squash.—FELTOE AND SMITH, London.—All authorities appear to be of opinion that the **Lime Juice Cordial** is one of the best of its kind. The **Lemon Squash** is an improvement on the popular beverage of that name, inasmuch as all the pulpy particles of the lemon are removed. As a non-intoxicating beverage, it should become quite the favourite.

L.G.B. "Soloids" of Corrosive Sublimate. Soloids of Compressed Iodic-Hydrarg. Hazeline Snow.—BURROUGHS, WELLCOME & Co.—The **L. G. B. Soloids** are made according to the formulæ given by Dr. Thorne Thorne in the general memorandum with regard to disinfection issued by the Local Government Board in 1892. Two of them added to a quart of water make a one-in-a-thousand solution of corrosive sublimate. We have found this form very useful in the sick-room, and as they are easily portable, the practitioner need never be at a loss for a disinfectant solution of definite strength ready to hand.

The **Iodic-Hydrarg. Soloids** are intended for the immediate preparation of antiseptic solutions for disinfection of hands and instruments, or for vaginal and other irrigation. Each is intended for half-a-pint of water. The mercuric-potassio-mercuric-iodide is said to possess several times the bactericidal strength of hydrargyrum perchloride.

The **Hazeline Snow** contains 50 per cent. of hazeline, and is a soothing, non-greasy application for burns, insect-bites, or chapped hands. It constitutes a beautiful snow-white preparation, which leaves no mark on the whitest hand a few seconds after its application; its astringent properties render it valuable in numerous affections of the skin.

Umbilical Envelopes. — Reynolds & Branson, Leeds.— Hitherto the baby's share in antiseptic benefits has been almost exclusively limited to receiving into the eyes a prophylactic instillation of some disinfectant lotion. In the opinion of Dr. J. H. Whitham, of Leeds, the well-ordered infant should begin its career with more aseptic or antiseptic advantages than this, and accordingly he has devised this umbilical envelope to take the place of the time-honoured rag with which the baby's cord has usually thrived well. It can do no harm; occasionally it may do good.

MEETINGS OF SOCIETIES.

Bristol Medico-Chirurgical Society.

December 13th, 1893.

Mr. J. Greig Smith, President, in the Chair.

The evening was devoted to a discussion on Intussusception, introduced by a paper by Mr. Arthur W. Prichard. (See page 1.)

Mr. Paul Bush was able to call to mind nine cases of intussusception occurring during the last few years in patients at the Bristol Royal Infirmary. Seven of these were treated without operation, and nearly all of them were given one or more rectal injections or inflations: death resulted in all seven. Of the two cases operated upon, the first was a child four months old, with symptoms of intussusception which had commenced at least three days before. Injections were tried and failed; abdominal section was performed. An intussusception of ileum into ileum was found to be so adherent that it could not be reduced. The whole mass was removed, and the two divided ends of the intestinal canal were fixed to the abdominal incision, with the idea of forming an artificial anus. Death resulted within twenty-four hours after operation from peritonitis. It is probable that if this case had been operated upon earlier, when the adhesions were less firm, the gut might have been reduced. The second case operated on was a patient just under four months old, who was admitted under Mr. Bush's care on May 20th, 1890, with the usual symptoms and physical signs of intussusception. Vomiting and passage of bloody mucus had commenced about eight hours previously. Large injections of warm water by means of Lund's apparatus, with the patient inverted, together with manipulations of the abdomen, were tried and repeated several times during the day of admission, without any relief of symptoms. On the 21st the child was given chloroform, and abdominal section in the middle line was performed. With a little manipulation a mass of intestine from the left side of the abdomen was brought out through the wound, when some small intestine was clearly seen passing into descending colon, and the vermiform appendix, cæcum, ascending and transverse colon were out of sight. By means of very gentle traction on the small intestine, but chiefly by pressure on the distal end of the swelling, the intestine was slowly "shelled" out from below upwards,

when it was found that about five inches of the termination of the ileum, with the ileo-cæcal valve and vermiform appendix (which was long), together with the ascending and transverse colon, were invaginated into the descending colon and rectum. The colon was found to be only very loosely fixed to the back of the abdominal cavity, which allowed for this extensive invagination. There was some slight general peritonitis, but the adhesions of the invaginated gut were only of very soft lymph. On restoration of the continuity of the gut, an irregular depression, about the size of a threepenny piece, was found on the extremity of the ileum, and round this was a considerable deposit of lymph. The intestines were replaced in the abdominal cavity and the wound closed. During the night the bowels acted without pain, and with only a trace of blood in the fæces. The patient made an uninterrupted recovery, and went home cured in three weeks. Mr. Bush had seen the patient twice since, at an interval of six months. She remains quite well, and has had no further attack. The eight fatal cases were males. As the mortality in cases of intussusception is so high, abdominal section should be performed immediately after the failure of one rectal injection which had been given slowly and carefully.

Mr. W. J. Tivy spoke of the treatment of intussusception occurring in adults beyond middle age, in whom the acute symptoms often subside quickly, and in whom it was possible, as he had found from experience in two cases, to give a prolonged trial to opium and rectal inflation with a good hope of success.

Mr. Dacre related three cases of intussusception which had come under his observation. The first was that of a child of four years, in which there was no difficulty in making a correct diagnosis. The patient was seen early in the attack, and all the symptoms were at once relieved by inflating the lower bowel with air through an ordinary bellows. The second case was that of a youth of eighteen, who died a few hours after admission to the hospital with all the symptoms of acute peritonitis. The *post mortem* examination revealed a general and severe peritonitis, and in addition an extensive intussusception of the ileum into the ascending colon. This had evidently been started by the weight of a polypus dragging one portion of intestine into another. There were fifteen to twenty polypi in the ileum and colon, of various sizes. The third case, a child of three, was first seen two days after symptoms of acute intestinal obstruction had shown themselves. The physical signs all pointed to intussusception of the bowel as the cause of the obstruction. After insufflation and injection of warm water had been first tried without effect, the abdomen was opened, and an artificial anus made in the distended ileum, as the intussusception could not be reduced, and the patient's condition did not permit of any prolonged operative interference. The child died sixteen hours after the operation from collapse, and at the autopsy a short intussusception of ileum into the colon was discovered. The involved portion was extremely congested, adherent on all sides, and quite incapable of reduction. In cases of intussusception an attempt should always be made at the earliest possible moment to reduce the displacement by means of insufflation of air, or by the steady injection of warm water or warm gruel. Failing this, no time should be lost in performing abdominal section and exposing the involved portion of bowel. If the local condition admitted of safe and easy reduction, this should be attempted: but if not, an artificial anus should be made at the lowest point of the distended gut, in order to temporarily relieve the urgent symptoms. If the patient's condition permitted a more lengthy interference, the affected portion of gut should be resected.

Dr. C. ELLIOTT narrated the case of a boy under his care who, twenty-four hours after a sudden attack of violent abdominal pain and sickness, passed blood *per anum*, and was admitted into the Children's Hospital. Under chloroform a "sausage-like" tumour, from two to three inches long, could be felt in the left iliac region, but not by the rectum. Injection of air with an ordinary kitchen bellows was tried, with at the same time upward kneading of the abdomen. As no improvement resulted in ten minutes, warm water was injected; but as not more than a pint could be thrown up, the injection of air was resumed and continued for fifteen minutes. As no good result was obtained, a consultation was held three hours after, when it was decided to open the abdomen. Before this was done, Mr. Norton suggested the trial of injection of cold water. This was attended with complete success. The tumour entirely disappeared. The patient was put to bed and given an opiate. Next morning the bowels acted naturally. In about ten days the boy was discharged perfectly well, and has remained so since.

Dr. JAMES SWAIN said that in the treatment of intussusception, operation should be resorted to as early as possible after inflation and other milder measures, to which Mr. Prichard had referred, had been tried without success. It is just as important to operate early in intussusception as in other cases of internal strangulation, after the failure of simple methods. The reason of this is at once apparent if we for a moment consider the pathological conditions, which may lead, even within twenty-four hours, to a considerable outpouring of inflammatory lymph between the peritoneal surfaces of the intussusception, and quickly prevent the possibility of disinvagination. It is then the duty of the surgeon to urge an early interference where operation is necessary; but in actual practice we must meet with cases where, from the reluctance of the patient to submit to operation, or from difficulties which precluded an early diagnosis, we find on operation that it is impossible to withdraw the invaginated bowel from the intussuscipiens. Under these circumstances the best operation is that which was originally proposed by Barker,[1] which in simplicity and perfection is much to be preferred to the formation of an artificial anus or the ordinary method of resection of the gut. By means of a diagram Dr. Swain described this operation, and displayed its various steps on portions of intestine in which intussusception had been produced on the cadaver. By utilising the adhesions which prevent the reduction of the intussusception, the continuity of the canal is secured. The operation cannot be done in less than half an hour, and therefore takes longer than the formation of an artificial anus, which is, of course, the only thing to be done where the patient is too much exhausted to allow the necessary time for the more satisfactory operation.

Dr. AUST LAWRENCE narrated the case of W.H., aged six years, who after an attack of diarrhœa lasting four hours, had sudden pain in the abdomen, which persisted for six hours, with blood and mucus passing *per anum*. A finger in the rectum detected an ovoid tumour, which was invaginated bowel. This was reduced under opium, rectal injections of warm water, and massage of the abdomen. These three methods of treatment are of the greatest importance in such cases.

Dr. J. G. SWAYNE showed two water-colour drawings (which he had made many years ago) from specimens of intestinal invagination obtained during *post-mortem* examinations. One of these was from a patient in St. Peter's Hospital, who was under the care of the late

[1] *Lancet*, 1892, vol. i., p. 79.

Dr. William Budd. In this case the invaginated portion consisted of the lower portion of the ileum, the cæcum, and a portion of the ascending colon. This is the most common form of intussusception, and occurs in fifty per cent. of these cases. The invaginated portion is of a deep port-wine colour, as if gangrene were impending. The other drawing represents intussusception of the rectum, a somewhat rare disease; for though the rectum constantly forms the receiving layer of an extensive intussusception, it is very seldom primarily affected. The invaginated portion consisted of the first part of the rectum, and had passed down into the hollow of the sacrum, nearly to the anus. Though apparently within reach of the finger, the nature of the disease had not been recognised during life. The invaginated portion was exceedingly vascular, of a granular appearance, and bright scarlet colour, appearing under the microscope to consist of thickened and hypertrophied mucous membrane. This case was that of an old man, a private patient of the late Dr. Symonds, who had for some time been the subject of chronic diarrhœa, which no medicines or injections would check. Had the precise nature of the disease been made out, surgery might possibly have effected a cure.

Mr. H. F. Mole reported some experiments made in the *post mortem* room in reference to the distension of the intestines in the treatment of intussusception. In each of the first five cases the abdomen was opened by a median incision from xiphoid to pubes, the rectum was then freed as low down as possible, and a long indiarubber tube connected with a glass funnel passed in at the anus and tied firmly into the lower bowel. Water in measured quantity was then poured into the funnel, and the height of this above the table on which the body lay carefully estimated. The intestines were closely watched while the distension took place. (1) **Male child, æt. 11.** Hydrostatic pressure, three feet. After the first pint, the large intestine being fairly distended, the water passed the ileo-cæcal valve with ease, distending the small intestine. This experiment was not carried further. (2) **Female child, æt. 5.** The bowel in this case was first distended with air, by means of a Higginson's syringe, the distension in consequence being of an intermittent character; but eventually the large bowel was evenly distended, and the air passed the ileo-cæcal valve with ease, and commenced to distend the small intestine. (3) **Same subject as in the previous experiment.** Hydrostatic pressure, two feet. After three-quarters of a pint of water the ileo-cæcal valve was passed easily; and the pressure being raised to four feet, after the passage of five pints the transverse colon ruptured, the water issuing from a small hole. (4) **Female subject, æt. 54.** Hydrostatic pressure, three feet. After three pints, water passed through the ileo-cæcal valve, but not at all readily. With a pressure varying from three to four and a half feet, and after seven pints had passed, the transverse colon ruptured near the splenic flexure. The peritoneum first split over a considerable length of the gut, and the hole in the gut was quite a small one, the water issuing in a fine jet. The small intestines were only slightly distended. (5) **An infant, æt. 11 months.** Hydrostatic pressure commenced at eighteen inches, and subsequently raised to three feet; after one and a half pints the valve was passed. The funnel was eventually raised to six feet, but four and a half pints having passed, and the intestines being greatly distended, no more would enter. As the abdomen was opened the results cannot well be compared with what would take place in the living subject, as the support of the parietes would obviously make a great difference. There seems no doubt, however, that both water and air can be made to pass through the ileo-cæcal valve with comparative

ease, and this when the large intestine is but slightly distended; and that hydrostatic pressure, though more difficult to work, especially in the living subject, is better than injecting, as it distends the gut more uniformly and evenly, and consequently with less chance of injuring any weak point in the intestinal wall, as no sudden shock is thrown on the gut. When distension was carried to excess, the water, rather than pass through the whole length of the small intestines, burst the large gut, owing probably to its fixed position. No water in any case entered the stomach. In the next three cases, the abdomen being unopened, the intestines were distended with Lund's inflator. It was found that a shorter tube would be more convenient, as the ordinary one had a tendency to hitch on the promontory of the sacrum and kink. It was also found in two of the cases that great force was required after the first few pints had been injected, to prevent the water regurgitating; but this perhaps was due to the marked degree of *rigor mortis* present in each case, and consequently the unyielding condition of the abdominal parietes. (6) **Female subject, æt. 62.** Only a few pints could be injected. The abdomen was then opened, and the water seen in the small intestines. On continuing the injection, about eleven pints were passed, and the large gut then ruptured at the splenic flexure, the peritoneum first splitting longitudinally over a foot of the gut. The water first began to leak through, and then a small jet issued, and finally, on still increasing the pressure, a large rent took place, with forcible expulsion of the contents of the bowel. The small intestines were only partially distended. (7) **Adult male.** About six or seven pints were injected, it being impossible to force in more. The abdomen was then opened, and the large intestine found distended, the water having passed, apparently quite freely, through the valve into the small intestine. (8) **Female subject, æt. 34.** In this case the abdominal parietes were comparatively flaccid, *post-mortem* rigidity having almost passed off. After fifteen pints had been injected, the contents of the stomach flowed from the mouth, presumably from being compressed against the diaphragm by the distended intestines, especially the transverse colon, as on resuming the injection no more fluid came from the mouth. Finally, and after considerable force had been used, thirty-two pints were injected, the abdomen being greatly distended; still none came from the mouth. The abdomen was now opened, and it was found that the transverse colon near the splenic flexure had ruptured, and also that there was a tear in the parietal peritoneum to the right of the umbilicus. There was water in the peritoneal cavity, and it was also widely diffused throughout the cellular tissue of the abdominal walls. The peritoneal coat had split longitudinally over a large extent of the large gut, including the whole transverse colon, and in a few places in the small gut. No water had passed into the stomach; indeed, the small intestines might have been much more distended. The only results of these experiments appear to be to show that no damage can be done to healthy intestines by injecting fluid with moderate amount of force; that the ileo-cæcal valve is easily passed in all cases; that in no case could water be made to pass the whole alimentary tract, or even reach the stomach (but the bodies experimented with were all horizontally placed, none inverted); and lastly, that the part most likely to be damaged by distension was in every case the transverse colon, either at or close to the splenic flexure, and before great distension of the small intestines had taken place.

Dr. F. H. Edgeworth drew attention to a specimen which had been brought for inspection from the Museum of the Royal Infirmary.

The patient from whose body it had been removed *post mortem*, had been admitted under Mr. Greig Smith, with the ordinary symptoms and physical signs of intussusception. The "sausage-shaped" tumour disappeared under rectal injection of milk, and the patient appeared to be on the high road to recovery, when he developed some obscure symptoms resembling tetanus, and died. At the autopsy an irreducible partial intussusception of the vermiform appendix into the cæcum was found. Apparently then, the apex of a considerable intussusceptum into the large intestine was formed by this intussuscepted appendix instead of by the usual ileo-cæcal valve. The specimen was believed to be unique. In the treatment of cases in which diagnosis was uncertain, Wilks has laid down the valuable rule, that no patient who was so ill from intestinal pain as to consult a doctor, should be treated by a purgative, unless the disease was, from the physical signs, obviously one of colic.

Mr. GREIG SMITH congratulated the Society on the general excellence of the discussion, and called special attention to what appeared to him to be the most noteworthy practical points in the remarks of the various speakers. In the treatment of an actual case, opium, as Dr. Lawrence had urged, would probably be employed; it was the only form of intestinal obstruction in which the use of opium was commendable. Then the weight of opinion was towards the employment, as a first step, of distension of the colon by injection of fluid by the rectum. Mr. Mole's experiments in the dead-house were here of conspicuous value, as showing the tensile strain of the colon to hydrostatic pressure, and the degree of pressure necessary to force fluid through the ileo-cæcal valve. It was clear that an elevation of the injecting reservoir of more than three feet was not safe. Hydrostatic pressure from an elevated reservoir should be employed, rather than insufflation by bellows or injection by hand-pressure. Prolonged distension under low pressure was more successful than rapid distension under high pressure. Mr. Bush was to be congratulated on being the only one of their number who had succeeded in saving a patient by operation. In that large proportion of cases where reduction was impossible, Barker's ingenious method of operation should be adopted. Mr. Greig Smith further called special attention to the admirable display of specimens exhibited, and thanked the curators of the Museums of the Royal Infirmary, General Hospital, and Children's Hospital for their loans. Every variety of intussusception was shown, some varieties being unique in their rarity or excellence. One of the Medical School specimens which he had cut vertically showed the anatomy of the condition very clearly. The beauty of Dr. Swayne's drawings was commented on, and a hope expressed that they might find their final resting-place in the School Museum. By the aid of a drawing, and by a working intestinal model on which intussusception was produced, Mr. Greig Smith dwelt upon certain practical points in the production and reduction of the conditions. The crossing of the mesenteric folds, limiting the descent of the intussusceptum and the ascent of the intussuscipiens; the plication of the ascending and receiving gut, which could be undone only by pulling downwards the receiving bowel; the small size of the actual intussusceptum and its influence in continuing the condition were demonstrated and discussed. Finally, some suggestions as to detail in Barker's operation were made.

British Medical Association.
Bath and Bristol Branch.

January 31st, 1894.

Dr. R. SHINGLETON SMITH, President, in the Chair.

The evening was devoted to a discussion on Appendicitis, introduced by a paper by Dr. James Swain. (See page 9.)

Mr. W. H. HARSANT said: The simplest way of classifying cases of appendicitis is to describe them as non-perforative or perforative, and to sub-divide the latter into circumscribed and diffuse. Suppuration is nearly always the result of perforation; recurrence simply means two or more separate attacks of the same illness, while relapsing appendicitis is only a variety of the non-perforative kind, with intervals of partial recovery between the acute attacks. The treatment of appendicitis resolves itself mainly into the question of operation. Shall we operate or not? And if so—when, and how? We might begin by laying down the rule, that when the appendix is known to be peforated we should operate without delay; but the converse is not true, for we should sometimes operate when there is known to be no perforation. All would agree that cases of diffuse perforative appendicitis should be operated on at the earliest possible moment, for these cases rarely live longer than a week unless operation be performed, and they are nearly always fatal even then. A few years ago I operated in a case of this kind. I was summoned in the night to go to Staple Hill to see a patient in the practice of Dr. Murray. Dr. Beddoe had seen the case that evening, and recommended immediate operation. I found a man who had been ill four days only, with symptoms of acute intestinal obstruction; indeed, the symptoms in this form of the disease always do resemble those of intestinal obstruction. His belly was much distended, and there was evidence of fluid in the peritoneal cavity. I opened the abdomen and let out a quantity of fæcal pus. I washed it out, and inserted a drainage tube; but the patient died the next day, and there was found a perforation of the vermiform appendix, with a diffuse purulent peritonitis. In cases of circumscribed suppuration the result of perforation we ought, it seems to me, to operate as soon as the diagnosis is clear. If pus is in the peritoneal cavity, we never know how soon it may become diffused; and the old idea of waiting until it comes to the surface or points is a very bad one, for the sooner we operate the better for the patient. It is in this class of cases that we are sometimes in doubt whether merely to operate and drain the abscess, or to search out the vermiform appendix and remove it. I have operated on two cases of this kind at the Infirmary during the last few years; and in one of them I was persuaded by a colleague to search for the appendix and remove it, while in the other I simply drained the abscess cavity, and both patients made a good recovery. In any future cases the rule I shall follow is, that if the appendix can be found without tearing down any dense adhesions, or without much disturbance of parts, I shall remove it, but not otherwise. My first case will illustrate the danger of pushing a grooved needle into the abdomen. A girl, aged 20, was sent to the Infirmary, on November 27, 1892, by Mr. Ewens, who had been called in by a medical man to see the case, and who at once recognised it as a case of perforative appendicitis. A swelling existed over the region of the cæcum, which had been punctured with a grooved needle before Mr. Ewens saw the case.

Nothing had come through the needle except gas and a little fæcal matter; but the effect of the puncture was to set up a septic cellulitis in the abdominal wall and the lumbar region. I opened and drained the peritoneal abscess, in which I found a lump of fæcal matter which had come through a perforated appendix. I did not remove the latter, as it was firmly bound down by adhesions; but I made numerous incisions into the cellular tissue of the loin, and the patient recovered, with nothing worse than a slight ventral hernia at the seat of the incision. It is in cases of the non-perforative variety, or where perforation is doubtful, that we are in the greatest difficulty whether to operate or not. Of course much depends upon the gravity of the attack. If the symptoms show signs of great severity, operation should be earlier performed than when the contrary is the case; but in any case operation should never be delayed beyond the second week, unless symptoms of improvement are manifested. Lastly, relapsing cases and cases of repeated recurrence may demand removal of the appendix in the intervals of the attacks; but even here we need not hastily assume that operation is absolutely necessary. I have had the opportunity of watching two patients in private practice, one of whom has had four attacks and the other three, and both have now been free from trouble for several years, and have apparently completely recovered, without operation. These, however, were not relapsing, but merely recurrent attacks, which are not nearly so grave as the severe form of malady to which Treves has called attention, and has given the name of relapsing. Here the only question is when the operation can be best performed, whether during the intervals of the acute crises, or at the commencement of one of the latter. Fortunately these cases are not often met with, and each must be dealt with on its own merits.

Mr. C. A. Morton said: I have been looking over my records of nine cases of perforation of the appendix. I should like first to make some remarks on the mechanism of perforation in these cases. Talamon believes that the concretion blocks the tube and impairs the nutrition of its walls beyond by pressure, and allows mucus to collect in the distal part, which becomes a cultivation fluid for the micro-organism soon destined to penetrate the devitalised wall and set up appendicitis. If this were so, I think we ought to find the concretion still impacted in the tube after perforation beyond it, and we ought to find the distal portion dilated from the distension, as Treves has pointed out so commonly happens when in relapsing cases the appendix is simply obstructed without the presence of a concretion. Neither condition, in my experience, do we find in perforating suppurative appendicitis. I will refer to my *post mortem* records of four cases in which such was certainly not the condition. **Case 1.** Boy, æt. 8. Perforated ulcer, with sloughy base *where concretion lay*, at tip of appendix, allowing pus in the tube to escape. There was certainly liquid fæcal matter in the peritoneum, which must have passed the concretion and escaped at the perforation, as no other perforation could be discovered. This was a case, not of localised peritonitic abscess, but of diffuse purulent peritonitis. **Case 2.** Girl, æt. 7. The tip of the appendix was separated from proximal part by ulceration, but was still attached to the cæcum by adhesions. It was not gangrenous. A few drops of liquid fæces escaped from the proximal end. Close by, in the peritoneal cavity, a putty-like concretion was found. There was no concretion remaining in the appendix. It seems to me most probable that where the concretion had lodged a circular ulceration had been set up, leading to complete severance of the tip,

and liberation of the concretion. This, like the last case, was one of general peritonitis. **Case 3.** Male, æt. 18. Appendix was greatly thickened and club-shaped, but not much distended. There were two perforations opposite one another, from both of which sloughs had not wholly separated. Appendix between cæcum and clubbed end normal. It seems highly probable that the concretion (which was not found) lay between the ulcers and escaped through one. A few very minute concretions still lay in the appendix. **Case 4.** Male, æt. 16. The end of the appendix had sloughed completely off and disappeared. The remaining inch of the appendix was quite patent, and mucus exuded from it. I will now refer to some of the clinical features in these cases, and first with regard to my own case—Case 4 of the pathological reports. There was a large swelling, reaching from the anterior superior spine to the umbilicus; and yet, after thirteen days' illness, no adhesion had formed to the abdominal wall. I made my incision in the usual place, just inside the anterior superior spine, but had to open the peritoneal cavity, and a part of the cæcum of normal appearance presented. From this wound, however, I could feel a hard irregular mass just within, with a soft spot in the centre; and I made another incision in the semilunar line immediately over it, and found an encysted collection of pus which had already ruptured into the peritoneum. The second case which I should like to refer to was admitted into St. Bartholomew's Hospital when I was house-physician there, and was one of general diffuse purulent peritonitis from the first, in a young man. But there was no tenderness of the abdomen whatever, and the vomiting was fæcal, conditions which led to a diagnosis of mechanical intestinal obstruction rather than peritonitis. Perhaps the most interesting of all these cases is one in which, *post mortem*, I found the perforated appendix hanging over into the cavity of the true pelvis, and an abscess formed there shut in by adherent coils above. There was no iliac swelling, but the pelvic one could be felt *per rectum* during life. The abscess had burst into the general cavity of the peritoneum, and general peritonitis had set in. I did not see the case during life, but made the *post-mortem* examination. It is Case 3 in the pathological records. Sometimes a perityphlitic abscess may be resonant, from gas generated by decomposition of the pus. I had under observation a case of this kind in the Children's Hospital. There was the typical swelling and symptoms. It was punctured by an exploring needle, and nothing came. It was very cautiously incised, and stinking pus was evacuated; and the boy recovered. I have quite lately opened a large pelvic abscess which was resonant from contained gas, which rushed out on opening it; and some time ago I saw, in consultation, a pelvic abscess pointing in the groin, which, because it was resonant, was supposed to be a hernia.

Dr. H. WALDO said: It appears to me that there is in some cases of appendicitis a cause which Dr. Swain has not touched upon. It is a gouty inflammation of this part of the intestine; a cause which, I think, is generally ignored by surgeons. Sir Alfred Garrod gives notes of the case of a very gouty man, aged 50, in whom, after exposure to cold, gout retroceded to the intestines, producing intense inflammation of the last eighteen inches of the ileum, as found after death. Another authority on this subject (Dr. Haig) considers that a large number of cases clinically indistinguishable from typhlitis, depend upon a gouty inflammation of the fibrous tissues of the intestinal walls, and he reports more than one case successfully treated by salicylate of sodium. I once treated upon this plan an acutely painful and tender enlarge-

ment of the cæcum in a gentleman over seventy years of age. The pain was very much relieved by salicylates, and the patient soon recovered. A powerful argument against very many cases of typhlitis depending upon uric acid, is the age of the patient; typhlitis mostly occurring before the gouty age. But, I think, with a reasonable suspicion of gout, I should give salicylates a trial, and, if possible, avoid opium and belladonna, as they so mask the symptoms, before handing the case over to the operating surgeon.

Mr. PAGAN LOWE considered that the clinical aspect of appendicitis, and the *post-mortem* appearances, were insuperable objections to the theory that foreign bodies produce the disease. The lymphoid tissue which surrounds the vermiform appendix is analogous in structure to the lymphoid tissues of the tonsils, and, like it, is remarkable for the variety of its inflammations. As in tonsillitis only a few cases go on to suppuration, so also in appendicitis abscess is the exception and not the rule. Appendicitis has been described as abdominal tonsillitis, and this description may be the correct one. Should it prove to be so, an explanation is at once afforded of the recurrent and relapsing forms of the disease. In cases not requiring operation, treatment by absolute rest, a diet consisting of nothing but hot water flavoured with brandy and Valentine's beef-juice, and the administration of salicylate of soda (in fifteen-grain doses three times a day) has given excellent results. Opium should only be given when the pain is severe, and enemata and aperients not at all.

Dr. CHARLES STEELE said: In considering this subject two great difficulties arise—the first that of accurate diagnosis, and the second that of performing a reliable operation. When cases follow the usual course of giving warning a short time previously, by irritation in the right iliac region, all other causes can be cleared off as not producing it, and we are able to define, in all probability, the reason of obstruction as lying in the vermiform appendix. But where cases occur suddenly without previous warning, and closely simulate those conditions which depend upon obstruction of the colon by an accumulation of feculent matter, the diagnosis is often impossible until operative measures can be of little avail. Such was the following case: A lady, aged 49, was taken suddenly ill on the 26th December, with severe pain in the abdomen. I saw her very promptly, and found her suffering from subacute peritonitis, with a very loaded tongue. There had been no rigors, and gentle manipulation did not enable me to pick out any one spot of particular tenderness. Associated with this was sudden and extreme sickness. There was no accumulation in the rectum, but at the highest point that could be reached the passage was contracted by pressure external to itself, as the mucous membrane was in a perfectly healthy state, and a large soft formation could be felt around it. I explained without hesitation that an operation would be necessary; and Mr. Harsant saw her within an hour with me, and we arranged an operation in the early afternoon. This, with Mr. Bush's assistance, as well as Mr. Harsant's, I performed, opening the walls in the linea alba, and on perforating the peritoneum a thin purulent offensive fluid escaped. I introduced two fingers, breaking down a few adhesions to the bowels, and opened up a large accumulation of the same fluid, together with lymph, in the left iliac region, which was making an attempt to become an abscess, and was the cause of the constriction of the rectum. These fluids having been thoroughly washed away by syphonage, I drew out a portion of the small intestine, stitched it carefully to the wound, put in a drainage tube, and on opening the intestine a fair amount of feculent matter was evacuated. The

patient, on recovering consciousness, was much relieved, and had a further evacuation three hours afterwards; but collapse supervened, and she died the next morning at 2.30. Mr. Bush and I made a *post mortem* examination, and found the wound in a perfectly satisfactory state; that nothing had run back into the abdominal cavity from it, and we could discover no cause of obstruction until I drew out the vermiform appendix, which had a small, hard feculent mass in it, and a small opening near the extremity with well rounded edges, through which a tortoise-shell hairpin could be introduced. This was the secret of the whole illness. Now the correct operation in this instance, as there had been no pain or other indication in the right side, was performed; but, as often happens, the *post mortem* examination made one feel very humiliated—for whereas everything seemed to have been done that could be done, yet the real trouble was entirely unmastered. Of this I am determined, that when I have another similar case where operative interference becomes requisite and yet perforation of the vermiform appendix does not appear to be the probable cause of the necessity for operation, I shall not be satisfied until I have examined that organ—and removed it, if the fault exists in it.

Dr. MICHELL CLARKE said that as the previous speakers had discussed appendicitis from the surgical aspect, he would make a few remarks from the physician's point of view. The first point that occurred to him was, that only a very small proportion of cases of perityphlitis would require surgical procedures if the diagnosis was always made at once, and appropriate treatment put in force. Hence the great importance of making an early diagnosis. This is often difficult. The pains of commencing perityphlitis may be general, simulating general peritonitis. Thus, in a case under his care, a girl of eighteen was seized with violent pains and diarrhœa within twenty-four hours after swallowing a sharp and large plum-stone. The pains were felt over the whole abdomen, which was distended and tender. Twenty-four hours later pain was localized, and confined to the right iliac fossa. Subsequently a large tumour formed there. The patient recovered after an illness of about four weeks, and as the swelling subsided a small hard elongated body could be felt in the position of the cæcum, which was either the plum-stone or the appendix. This girl has remained quite well during the two and a half years that have elapsed since the illness. Another point was the occurrence in his experience almost invariably, not of constipation, but of the passage of two or three or more loose stools at the onset of the illness. Then in some cases it may be difficult at first to distinguish appendicitis from typhoid fever. Thus, a man under his care suffered from perityphilitis with portal pyæmia, and secondary abscesses in the liver. This complication made the case resemble enteric fever at first, and an accurate diagnosis could not be made until nearly two weeks after the onset. Dr. James Swain has mentioned the views held as to the part played by the bacterium coli commune in appendicitis; and I may incidentally mention that Mr. Stoddart kindly made cultivations for me from the pus in this case, but found only the common pyogenic organisms. In another case of portal pyæmia, secondary to dysenteric ulceration of the colon, the bacterium coli commune was present. Further, cases occur in women in which inflammatory exudation affects both the pelvis and the right iliac fossa, and in which it is difficult to say whether the peritonitis started from the pelvis and spread upwards, or *vice versâ*. That the cæcal form of perityphlitis from fæcal accumulation has been altogether disproved he did not believe, although the nature of the cases does not so readily admit of

proof *post mortem* as in the case of appendicitis. A case of perityphilitis in an old lady of 88, who suffered from habitual constipation, appeared to be certainly of this nature: it ended in recovery. As to the general treatment of ordinary cases of appendicitis, he thought the administration of aperients and enemata was inadvisable. It had been shown over and over again that patients do not suffer any harm from not having an evacuation of the bowels for two or three weeks, or even longer; whilst there was certainly risk, which could not be guarded against, because its exact nature could not be foreseen in each individual case, in administering purgatives and enemata. There was no reason to depart from the established treatment by absolute rest and opium. With regard to the indications for operation. In a case seen from the first, the pulse-rate and the temperature should fall and remain normal after the first two or three days if the patient was doing well: but if after the temperature had been normal for some little time it began to rise again and remain high, and if at the same time the pulse became worse in character, then it was time to operate. If, on the other hand, the patient had been ill for some time before coming under observation, the question of operation must be decided on general principles. If in either case there is a doubt as to the presence or not of pus, but the patient is not doing well, is losing ground under ordinary medical treatment, then it is better in such a case of doubt to operate without further delay. It is well to remember that even desperate cases may recover by means of operation. A boy in whom perforation into the general abdominal cavity had presumably taken place two days before he was seen, whose abdomen contained free pus and gas, and who apparently could not live twenty-four hours, recovered perfectly after operation. The abdomen was simply opened and washed out by Mr. Paul Bush, who a few days later, at a second operation, removed the appendix. Lastly, the great success of operative procedures in cases of appendicitis during recent years, should not make us forget that the large majority of cases of appendicitis do not require operation, or make us less careful and painstaking in carrying out the ordinary medical treatment by rest and full doses of opium.

Mr. Nelson C. Dobson said: I wish to confine my remarks for the most part to some points in the treatment of appendicitis: the difference of opinion which has already been expressed seems to me to arise in a great measure from the fact that the disorder under consideration is one of variable intensity, and the observer naturally draws his inferences from the class of cases he is most frequently meeting with. Now, without attempting any perfect or precise classification, I think we may, for practical purposes, divide appendicitis into four classes: (1) Those cases with the ordinary symptoms and without definite swelling in the iliac region, and which with judicious medical treatment recover and remain permanently well. (2) Those in which the symptoms are more marked, and have added to them a distinct swelling, and which go on to suppuration: these cases require to be opened at the most convenient spot as soon as pus is found. Generally simple evacuation and drainage is all that is necessary; the appendix should only be removed in such cases when this is easily within reach. (3) Those that are intermediate between the first two, and neither suppurate nor get permanently well. It is in "relapsing" cases that removal of the appendix during a quiescent period is practised with more or less frequency and success; but looking back on my past experience, I think the occasions in which it is necessary must be very rare. I have found that by rest and patience,

thickened and inflamed appendices thoroughly recover. I have also found that adherent, distorted, and displaced appendices in several cases gave rise to no discomfort during life. The last class is the perforating or fulminating variety. Here the only chance of success lies in operation. When general peritonitis is present the abdomen should be opened and drained, without attempting to remove the appendix. If we could diagnose the exact moment of perforation, we should cut down on the appendix and remove it; but I know of no precise means of diagnosing its occurrence, and I am not prepared at present to advocate the rule in strangulated hernia—"When in doubt, operate."

Mr. GREIG SMITH dwelt upon the difficulty of working out a classification of appendicitis which would be at once scientific and practical. The natural groupings of the disease as found in the *post mortem* room or on the operating table were exceedingly varied, and did not lend themselves to definite classification. Practically he had found in his own experience of some fourteen operations exceptions to the classification he had adopted. Thus he had found perforation in a case of relapsing appendicitis; and an enormous abscess was found around a gangrenous appendix which had not perforated. After remarking on the influence which the foreign body played, and giving an explanation of various features in the disease which had struck him, he thought that in their practical work they would find it convenient to recognise three leading varieties; viz.: (1) The fulminating or perforating, with fæcal extravasation, almost uniformly fatal; (2) the suppurating, such suppuration being nearly always localised, and demanding immediate operation; (3) the simple, usually plastic, but often merely catarrhal, and occasionally relapsing, and demanding operative relief according to the urgency of the objective symptoms.

Mr. PAUL BUSH said that we owed a great deal to American surgeons; but he wished to call attention to the fact, that in the records of the Bristol Royal Infirmary of sixty years ago the late Mr. Fred. Granger, of this city, described very accurately the position of what is now known by the name of "McBurney's spot." This "spot," if it must have a special name, should be called the "Bristol spot" or "Granger's spot."

Mr. W. M. BARCLAY laid stress on the importance of early and persistent medical treatment, especially the administration of opium. The chief indication for operative interference (excluding fulminating and relapsing appendicitis) is the advent of suppuration; and the determination of this cannot be obscured by the drug, whereas it may have a directly curative effect by relaxing the spasm that may produce kinking of the appendix and by abolishing peristalsis. In the relapsing form, operation is advisable if the case has been watched sufficiently long and is not improving, or shows signs of increasing in severity or frequency of recurrence.

Mr. PICKERING said that to state that an operation was necessary in the suppurative form of appendicitis did not give any practical guide as to when an operation should be performed, because it was often very difficult to know when suppuration existed, and minor cases of the suppurative form of appendicitis would recover without operation. He considered that an operation was necessary—(1) in cases where fluctuation could be felt in the swelling; (2) in cases where, notwithstanding appropriate medical treatment, the temperature kept persistently high, or where the swelling increased in size either with or without a high temperature; (3) in cases where the exploring syringe had been used, and pus tapped.

Dr. W. H. C. NEWNHAM deprecated operative interference in every case of appendicitis, and said that although he had seen an enormous number of such cases during eleven years' experience as a hospital resident, he had never known a fatal case, nor one in which operation was necessary.

Dr. G. PARKER said that the cause of appendicitis appeared to be entirely unknown. Some occasional poison in the fæces might be the agent. Certainly neither concretions, strictures, colitis, nor the mechanico-bacillary theory of Talamon would account for it. Ribbert and Fitz had shown that concretions were actually found oftener in healthy appendices than in diseased ones, nor were they always at the affected spot, nor was it clear how they could possibly cause the inflammation. Strictures, partial or complete, had been found in 25 per cent. of healthy persons; and, in fact, the orifice of the appendix gradually becomes smaller with advancing years. Though Hodenpyl recorded the presence of the bacillus coli communis in 33 out of 35 cases of perforative appendicitis, that was simply because it alone survived in the cultures. Borlacci showed that there were plenty of others, and that the bacillus coli alone would not cause peritonitis.

Dr. SHINGLETON SMITH remarked that as regards the treatment of appendicitis, the two things needful were rest and opium to relieve pain. There was no objection to the administration of opium in cases where all question as regards obstruction of the bowel could be excluded, and in cases where the pain is severe it must be absolutely impossible to withhold opium or morphia in sufficient quantity to give relief to the pain; at the same time it tends to keep the bowel in absolute rest, so as to favour adhesion and so prevent general peritonitis when perforation may occur. The use of saline aperients and enemata should not be encouraged, as they were in opposition to the principle of keeping the bowel at absolute rest. Peptonised foods should also be given on the same principle; viz., that of encouragement to alimentary inaction.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the list in December:

February 28th, 1894.

The Dowager Lady Bowman (1) ... ... 2 volumes.
The Council of the Clinical Society (2) ... ... 16 ,,
L. M. Griffiths (3) ... ... 3 ,,
Christopher Martin, M.B. (4) ... ... 1 volume.
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R. Shingleton Smith, M.D. (6) ... ... 1 ,,
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Unbound periodicals have been received from Dr. Shingleton Smith.

ELEVENTH LIST OF BOOKS.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Allingham, H. W. *Internal Derangements of the Knee-Joint* 1889
Allingham, W. ... *Diseases of the Rectum.* 5th Ed. (Ed. by H. W. Allingham) 1888
Arlidge, J. T. ... *Diseases and Mortality of Occupations* 1892
Bastian, H. C. ... *The Brain as an Organ of Mind* 1880
Beasley, H. ... *The Druggist's General Receipt Book* ... ... 9th Ed. 1886
„ ... ... *The Book of Prescriptions* ... ... 7th Ed. 1892
Bowlby, A. A. ... *Injuries and Diseases of Nerves* 1889
Bowman, Sir W. *Collected Papers.* (Ed. by J. Burdon-Sanderson and J. W. Hulke) ... ... (1) 2 vols. 1892
Boxall, R. ... ... *Antiseptics in Midwifery* 1894
Bramwell, B. ... *Atlas of Clinical Medicine.* Vol. II., Part III. 1893
Brewis, N. T. ... *Outlines of Gynæcological Diagnosis* 1894
Bristowe, J. S. ... *Diseases of the Nervous System* 1888
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Coupland and O. Sturges, S. *Pneumonia* ... ... 2nd Ed. 1890
Dickinson, W. H. *The Tongue as an Indication in Disease* 1888
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Ear, Nose, and Throat, Diseases of the. (Ed. by C. H. Burnett.) 2 vols. 1893
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Fothergill, J. M. *Gout in its Protean Aspects* 1883
„ ... *The Physiological Factor in Diagnosis* ... ... 2nd Ed. [1884]
Goodhart, J. F. ... *On Common Neuroses* ... ... 2nd Ed. 1894
Hart, D. B. ... *Selected Papers in Gynæcology and Obstetrics* 1893
Hastings, J. ... *Pulmonary Consumption* ... ... (3) 1843
Haultain, F. W. N. *A Practical Handbook of Midwifery* 1894
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Horne, J. F. ... *Trephining in its Ancient and Modern Aspect* 1894
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Inglis-Parsons, J. *The Healing of Rodent Cancer by Electricity* 1893
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McCaw, J. ... ... *Aids to the Treatment of Diseases of Children (Medical)* [1893]
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,, ... *The Nerve Theory of Menstruation*... ... ... (4) 1893
Mickle, W. J. ... *General Paralysis of the Insane* ... ... 2nd Ed. 1886
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Parker and H. O. Thomas, R. *Intestinal Obstruction and Abdominal Hernia* 1883
Parker, R. W. ... *Diphtheria*... ... ... 3rd Ed. 1891
Parkes, L. C. ... *Infectious Diseases* 1894
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Stewart, W. R. H. *Aids to Otology* ... ... 2nd Ed. [1893]
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,, **and S. Coupland** *Pneumonia* ... ... 2nd Ed. 1890
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SCRAPS

PICKED UP BY THE ASSISTANT-EDITOR.

Clinical Records (6).—Doctor to sick man recovering from typhoid: "I think we may venture now to make some further change in your diet. What do you say to having, to-morrow, a little fish?" Patient, with an enormous desire for food: "Oh, doctor, I would very much rather have a *big* fish."

The Leucocyte's Lament.—The following has been sent to me by a subscriber who received it direct from Cambridge:

"The leucocyte or white corpuscle is, we have every reason to believe, capable of existence. Some authorities have asserted it is a normal constituent of the blood, but the matter has not been fully worked out, neither is the time ripe for a dogmatic statement."

The leucocyte was in a gland
With inflammation red,
He grasped a comrade by the hand
And with a sob he said:
"'Mid solitary follicles
I wend my weary way,
Deep down in crypts of Lieberkühn
Far far from light of day.
Alas! this aching nucleus
Can ne'er be free from pain,
While tissues hide my beauteous bride
I ne'er shall see again.
A rosy-red corpuscle she,
The pride of all the spleen.
Her like in this dark gland, I fear,
Will never more be seen.
A fierce bacillus captured her,
And reft her from my side;
Carbolic oil his plans did foil,
But ah! it slew my bride.
With pseudopodia feebly bent
And bowed down nucleus, I
Must turn to pus."—And, speaking thus,
He wandered forth to die.
Oh! lightly they'll talk of that leucocyte true
As they label and mount and degrade him.
But little he 'll reck, when with aniline blue
They 've stained and in Canada laid him.

Medical Philology (IX.).—In the *Promptorium* occurs "Bony, or hurtynge," with the Latin equivalent of "Fleumon," taken from Johannes Januensis (1286), and "flegmen" from *Campus florum* (*c.* 1359). In Pynson's printed edition (1499), "tumor" was added to the definitions. Mr. Way's note is:

> The *Catholicon* explains *flegmen* to be, "*tumor sanguinis. Item flegmina sunt quando in manibus et pedibus callosi sulci sunt.*" It would appear to be the same as a bunnian, the derivation of which has been traced from the French, "*bigne, bosse, enflure, tumeur.*" ROQUEF. Cotgrave renders it a bump or knob, and he gives also "*Bigne*, club-footed." Sir Thos. Browne, Forby, and Moore, give the word bunny, a small swelling caused by a fall or blow; in Essex, "a boine on the head." In Cullum's Hawsted, among the words of local use, is given bunny, a swelling from a blow.

Cotgrave's full definition of "Bigne" is "A bumpe, knob, rising or swelling after a knocke."

From the first of the equivalents given in the *Promptorium* it would seem that the earliest application of the word was to an inflamed swelling, proceeding, as its alternative of "hurtynge" would show, from an injury. "Bunny" early became one of its alternative spellings. The *New English Dictionary* quotes "Bownche or bunnye, *gibba*," from Huloet's *Abecedarium* (1552), and "Contunial bunnies and looseness of certain joints" (II. cclxxix. 793), from the 1633 edition of Gerard's *Herbal*, first printed in 1597. Prof. Skeat points out that bump, bun, bunch are also all connected with the idea of a rounded lump or knob. Cotgrave gives "Bignets: *Little round loaues, or lumps made of fine meale, oyle, or butter, and reasons: bunnes, Lenten loaues; also, flat fritters made like small pancakes.*" In 1543, Traheron's translation of Vigo's *Works of Chirurgerye* speaks of "the gibbosyte or bounch of the liver" (I. x. 9), and Gerard says, "The leauen made of Wheate . . . openeth all swellings, bunches, tumors and felons" (I. xl. 60).

The present restricted use of the word bunion is of quite recent date. The *New English Dictionary* goes no further than to say that the modern "bunion" is probably connected with "bunny," of which "bony," as it appears in the *Promptorium*, was the earliest form. In case this note should be seen by any non-medical reader, it is perhaps worth while to mention that "bony" has no connection with bone. "Bunnians" was used by Rowe about the beginning of the eighteenth century as a term for corns.

The etymology of these allied words is doubtful. I hope some reader will work out their connection more thoroughly than I have been able to do.

The Black Death in Chaucer's Time.—In the *Journal* for September, 1889, a note concerning the Black Death was given from Hecker's *Epidemics of the Middle Ages*. In connection with this, the following passage from Prof. A. W. Ward's *Chaucer*, in the "English Men of Letters" series, will be read with interest: "In the year of King Richard II.'s accession (1377), according to a trustworthy calculation based upon the result of that year's poll-tax, the total number of the inhabitants of England seems to have been two millions and a half. A quarter of a century earlier—in the days of Chaucer's boyhood—their numbers had been perhaps twice as large. For not less than four great pestilences (in 1348–9, 1361–2, 1369, and 1375–6) had swept over the land, and at least one-half of its population, including two-thirds of the inhabitants of the capital, had been carried off by the ravages of the obstinate epidemic—'the foul death of England,' as it was called in a formula of execration in use among the people. In this year 1377, London, where Chaucer was doubtless born as well as bred, where the greater part of his life was spent, and where the memory of his name is one of those associations which seem familiarly to haunt the banks of the historic river from Thames Street to Westminster, apparently numbered not more than 35,000 souls. But if, from the nature of the case, no place was more exposed than London to the inroads of the Black Death, neither was any other so likely elastically to recover from them. For the reign of Edward III. had witnessed a momentous advance in the prosperity of the capital,—an advance reflecting itself in the outward changes introduced during the same period into the architecture of the city. Its wealth had grown larger as its houses had grown higher; and mediæval London, such as we are apt to picture it to ourselves, seems to have derived those leading features which it so long retained, from the days when Chaucer, with downcast but very observant eyes, passed along its streets between Billingsgate and Aldgate. Still, here as elsewhere in England the remembrance of the most awful physical visitations which have ever befallen the country must have long lingered; and, after all has been said, it is wonderful that the traces of them should be so exceedingly scanty in Chaucer's pages. Twice only in his poems does he refer to the Plague:—once in an allegorical fiction which is of Italian if not of French origin, and where, therefore, no special reference to the ravages of the disease *in England* may be intended when Death is said to have 'a thousand slain this pestilence,'—

> he hath slain this year
> Hence over a mile, within a great villáge
> Both men and women, child and hind and page.

The other allusion is a more than half humorous one. It occurs in the description of the *Doctor of Physic*, the grave graduate in purple surcoat and blue white-furred hood; nor, by the way, may this portrait itself be altogether without its use as throwing some light on the helplessness of fourteenth century medical science. For though in all the world there was none like this doctor to *speak* of physic and of surgery;—though he was a very perfect practitioner, and never at a loss for telling the cause of any malady and for supplying the patient with the appropriate drug, sent in by the doctor's old and valued friends the apothecaries;—though he was well versed in all the authorities from Æsculapius to the writer of the *Rosa Anglica* (who cures inflammation homœopathically by the use of red draperies);—though like a truly wise physician he began at home by caring anxiously for his own digestion and for his peace of mind ('his study was but little in the Bible'):—yet the basis of his scientific knowledge was 'astronomy,' i.e., astrology, 'the better part of medicine,' as Roger Bacon calls it; together with that 'natural magic' by which, as Chaucer elsewhere tells us, the famous among the learned have known how to make men whole or sick. And there was one specific which, from a double point of view, Chaucer's Doctor of Physic esteemed very highly, and was loth to part with on frivolous pretexts. He was but easy (i. e. slack) of 'dispence:'—

> He keptē that he won in pestilence.
> For gold in physic is a cordial;
> Therefore he lovēd gold in speciál."